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ADDRESSES.

THE PRESIDENT'S ADDRESS.

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Another year has brought the Association to a renewal of its labors. It now stands, and will stand, as the exponent of the profession in its varied relations to the community and to its members. It will be immovable to adverse criticisms, as long as it upholds the traditions of the profession which themselves are the outcome of the highest sentiments of humanity. Generous and liberal it hopes for the recognition of its high standard by all.

It is not forgetful of the fact that the grand army enlisted under the banners of the medical profession has always been infested by the bummer and guerrilla in it march down the ages. As time goes on new duties arise that are the natural outgrowth of the conditions that surround us. A survey of the field of action imposed by our proper relations to the communities we live amongst, and by those incident to our associate character to the nation at large, impresses me with a deep sense of our duty in urging forward the active exercise of those measures which science has thus far indicated for the promotion of hygeine. It has too long been the fact that this whole topic has been developed by the medical philosopher, and not until recently by any one who has a direct professional interest in its study.

Mankind expected information and aid from those that it failed to compensate. Perhaps the most profound thinker upon the organization of government, that the last hundred years has produced among the English speaking people was Jeremy Bentham. His works adorn the shelves of good public libraries, and are seldom disturbed in their resting places. The world has reached the goal that he indicated as the most important one for mankind to reach: "The greatest happiness for the greatest number."

To enforce this doctrine upon the minds of his readers, which he did with great minuteness of detail, by arguments of the most elaborate kind, seems to an American audience as unnecessary, as to prove that two and two make four. But while his thoughts were directed to the consideration of right conduct in all conditions of society, his words were especially addressed to his own people. I think few persons have the slightest knowledge of Bentham's labors, except through the contemptuous sneers of the aristocratic element of society, which wielded the powers of the government under which he lived. His views at the time of his writing incorporated in the structure of our own nationality, have become the aim of all civilized people. After a life spent in the most searching enquiries into the wants of our common humanity, the whole was brought to a focus upon the details as well as the generalization of a constitutional code. This minutely expanded and spread over the pages of a large octavo volume, in order to give the most careful attention to the detail, and yet technically concise, fills one with amazement at the intellectual effort. It was the life work of a great man. The executive head of this proposed government, was a prime minister as the regulator of the functionaries below him. These were numerous. The foreign affairs minister appears very naturally. The treasury minister as well. The army minister and the navy minister are all treated of with the most minute detail. On a par with these is the health minister.

What has been the progress of opinion on this subject of hygeine? Can we feel that it has received a tithe of the consideration that it deserves. Says an observant foreigner, "the Americans are bright and intelligent people, but they care nothing for health; they lavish it, and when it is gone, they lavish money on pills." What a truthful sketch of our lives. We are here to-day because we are therapeutists and not because we are hygeinists. Nevertheless we have no cause for discouragement. Great movements are slow. The national conduct is but the reflex of the individual behavior. The average citizen accepts health as he does the air he breathes as his natural right. He joins in the race for wealth or place, as if to determine the scientific problem of the survival of the fittest, gibes the doctor and "throws physic to the dogs." Suddenly he be-

comes aware that the pace is killing. Then he begs for pills. Then comes the search for a panacea or catholocon. To set his house in order and pursue the reasonable aims of life in a reasonable manner, is the method of a rare man. What has been the conduct of the aggregate man? Precisely the same. Contemptuous of precaution when the pestilence came, he has, until lately, known little else than a resort to the semi-religious Oriental forty days, his quarantine. That we are emerging from this state, and that precautions are sometimes employed is admitted. But that the legislative and executive efforts keeps pace with the progress of science I am quite sure is not true. Still at the present time it is accelerating. It must ever be the care of the profession to promote and guard the movement. The conduct of the matters appertaining to hygeine must ever be under its direction. The understanding that informs the executive, must be of the highest order and best training. The interests at stake are enormous, not merely to health and life, which of course are paramount, but also to those that concern the property of mankind.

The tearing off the shackles that impeded commerce and human movement in passed time, is due to medical science as applied to hygeine, and this long before the amazing discoveries in bacteriology of to-day, which have given a scientific demonstration of the correctness of methods already formulated, the result of experience and observation.

The history of legislation confirms these views, and yet its present status is full of encouragement. I have studied the work of Congress as shown in the laws from its inception to the present time. I must confess not a very laborious undertaking. The first Act passed by Congress with reference to health matters was in 1796, February 26. It directed the President of the United States to assist the State Government in the execution of the State laws upon the subject of quarantine by his commands to all officers of ports on the coast and commanders of revenue cutters. This short Act was repealed by another and more comprehensive one passed February 26, 1799. This Act relieved the President of any direct attention to matters of quarantine, by placing its care in the hands of the Secretary of the Treasury. This was obviously done because the question of revenue was involved in unloading and disinfecting ships. The Act, however, first reaffirms the relations of the United States Government to that of the States.

"And the said Secretary may be, and he is hereby authorized, when in conformity to such quarantine and health laws, shall require it, and in respect to vessels which shall be subject thereto, to prolong the term limited for the entry of the same and the report or entry of the cargoes, and to vary or dispense with any other regulations applicable to such report or entry. Provided that nothing herein shall enable any State to collect a duty of tonnage or import without the consent of the Congress of the United States thereto. And provided that no part of the cargo of any vessel shall in any case be taken out or unladen therefrom otherwise than by law allowed or according to the regulations hereinafter established.

Section 2 of the Act provides for the care of the vessel and the cargo when the health laws declare the necessity of unloading and removal to some place other than usual.

All this to be under the care of the Secretary of the Treasury, who exercises complete control of said cargoes until the revenues accruing have been paid, and the health authorities have released them.

Section 3 directs the Secretary of the Treasury to provide proper storehouses at proper sites for the care of the property according to the requirements of the health laws of the State, and at such convenient place or places therein as the safety of the public revenue may demand.

Section 4 provides for the safety of the officers connected with the revenue service, by allowing them to remove their offices to a safer position if an epidemic should prevail.

Section 5 provides for the adjournment of any United States court, and also for the removal of prisoners to another place of confinement at the expense of the United States during an epidemic.

Section 6 gives power to the President of the United States to remove any or all public officers if necessary.

Thus early was initiated a policy which has prevailed to the present time and which has been watched with great care and jealousy. The rights of a State have been asserted and maintained with the endorsement of the highest tribunal, not without some friction, the natural treatment of our dual government. No further legislation appears on the statute books until 1832, when a cautious expenditure is made to aid in enforcing the law by providing for more revenue cutters if necessary, but the force of the Act terminated within a year. From this time there is complete silence on health legislation until 1844, when an Act was passed providing for a special building at Lazaretto Point, for the purpose of quarantine. But shortly after this the country was visited by an epidemic of cholera. The previous one occurring in 1832, and far more severe, which struck fear into the heart of the nation, depopulating cities, was left to the management of the local authorities. No health organization worthy the name existed at any point. Indeed the natural guardians of the people, the members of the medical profession, were appalled and misdirected by erroneous theories of the disease. Two more epi-

demics supervened, and the transmission of cholera by persons to localities was no longer to be questioned. A vague atmospheric cause that no one could escape did not explain the phenomena of the disease. Accordingly we find the nation becoming aroused, and on May 26, 1866, a joint resolution was passed by Congress which declares "that the Secretary of the Treasury be and he is hereby, authorized to make and carry into effect such order and regulations of quarantine as in his opinion may be deemed necessary and proper to aid State or municipal authorities to guard against the introduction of cholera into the ports of the United States. And the Secretary of the Treasury is further authorized to direct the revenue officers and the officers commanding revenue cutters to aid in the execution of such quarantine, and the execution of the health laws of the States respectively, in such a manner as may seem to him necessary. And such an amount of money as may be necessary to carry into effect this joint resolution, is hereby appropriated out of any money in the Treasury not otherwise appropriated; provided, the authority hereby granted shall expire on the first Monday of January, Anno Domini 1867."

Here again we have the Secretary of the Treasury circumscribed in his action by the limitation of time, and that a short one. Special attention in health matters is again relaxed for ten years, the ordinary machinery of government being entrusted simply with the duties of quarantine, but in 1876 attention to the wants of the District of Columbia was given by an Act that provides for the salaries of the health officer and his assistants and allows ten thousand dollars in the event of an epidemic occurring. During the next year there were further modifications and a larger sum of money granted. From this time forward appropriations for the District are made yearly and in varying amounts.

Another great step in the movement of hygiene was an Act passed April, 1878, directing the Surgeon-General of the Marine-Hospital Service to make rules for the consuls in foreign ports with reference to certificates declaring the condition of the vessels and cargoes bound for ports in the United States. Then follows an Act showing further attention to details by changing the organization of the health board of the District of Columbia, it being abolished, and its powers transferred to the Commissioners of the District, the salary of the health officer being fixed at three thousand dollars. But before the close of the year another great movement in advance was made in legislation by an appropriation for paying the necessary expenses incurred in investigating the origin and causes of epidemic diseases in the United States. But in the meantime another great movement in the study of hygiene had been effected by the organization of State boards of health. The local boards existed with ample powers, but total neglect of duties. In the large cities, however, there were able men whose whole time was given to the work and sufficiently compensated, to bring the attention of the communities they lived in to the vast defect of municipal life.

Knowledge was expanding, and that most remarkable and valuable of all the engines for the promotion of hygiene, the State board of health, came into existence. This was not without great labor and heart-sickening delay. The best informed could see the great good, but the watchful conservative was stirred to the utmost, and regarded with horror the vast powers which the health organization must exercise directly or indirectly.

It has ever been difficult to make the citizen, in the enjoyment of the great freedom of motion of which the English and American people are so jealous, to submit to military control in time of peace, and a control which reaches into his special domain, his conventional castle. But the local boards in the smaller communities were ever asleep at their posts until some fearful invasion of small-pox roused them to action. Then they, perhaps for the first time, studied the statutes of their State government to learn that their power was military, and the citizen, pale with fear, submitted to the restraint necessary for his safety. Then, in the rural district, he would assist in stretching the fence across the road to enforce the necessary quarantine. But as soon as the great danger was passed he would lapse into freedom, and perhaps jeer at vaccination.

But the conditions for controlling the invasion of pestilence are those of military operation. Power must be autocratic—an enemy is to be resisted, pursued, destroyed. Our external defenses must be constantly manned. Vigilance must never be relaxed. For the protection of society a military organization is in constant existence; it may be a sleeping lion, but it is a lion still. Thus the cholera and yellow fever must be met. The invading hordes are invisible, but they come like the genii of Oriental stories. Panic sometimes attacks the best disciplined armies in an unaccountable manner. But when pestilence strikes a city the boldest flee.

To the credit of our age, even the superstitious do not bow their heads to the mysterious ways of Providence, but rise to the effort to obey his laws. Science searches out the enemy and devises the attack. But the machinery of defense must be in constant order. To bring about this result the State board of health came into existence. As has already been said, the development of this body was slow.

The power conferred on it in different States has not been precisely the same. In most of them it has no power at all. They are merely

advisory bodies. The power is to be exercised by the Governor of the State who is expected to receive their instructions. Even at this time there are some States that have not erected this organization. But where once created they have remained. The jealousy of the military power has passed away, for it has not been used as a means of oppression and the benefits flowing from it have been so great that not one board has been destroyed. They have furnished hygienists for the nation. They have brought the local boards to the performance of their duties in a greater degree. I believe their life is secure and great expectations may be entertained of their future usefulness. It is idle to suppose that the executive of any State has the knowledge which can direct him in the right path of action. This must be the outgrowth of science ever advancing. But nations are naturally fearful of professional dictation. This has been shown by the fear of military men in control of free States. The success of the State boards very naturally pointed to the erection of the National board. It seemed to those most familiar with their workings, that such an institution would fill the measure necessary for the wants of the nation. It was the reflex action of our governmental structure. It was suggested that a permanent organization should be representative of the State boards and thus be in touch with the people. Such opinions were, however, speculative and looked to the future. When these views were agitated, the scourge of pestilence was present. Action could not be delayed, and a board thought to be representative of large interests should be formed at once. But the Act itself provided for the future by calling on those supposed to be best able to make a competent selection. It was found that the plan at first adopted, met the conditions required and it was believed by those selected to judge, to be the best one after its first year of trial.

On March 3, 1879, an Act was passed to prevent the introduction of infectious or contagious diseases into the United States and establish a National Board of Health. This is such an important part of our history that I quote it entire.

Be it enacted, by the Senate and House of Representatives of the United States of America in Congress assembled, that there shall be established a National Board of Health to consist of seven members to be appointed by the President by and with the advice and consent of the Senate, not more than one of whom shall be appointed from any one State, whose compensation during the time when actually engaged in the performance of their duties under this Act, shall be ten dollars per diem each, and reasonable expenses, and of one medical officer of the army, one medical officer of the navy, one medical officer of the marine-hospital service, and one officer from the department of justice, to be detailed by the Secretaries of the several departments, and the Attorney-General respectively, and the officers so detailed shall receive no compensation. Said board shall meet in Washington within twenty days after the passage of this Act, and in Washington or elsewhere from time to time upon notice from the president of the board who is to be chosen by the members thereof or upon its own adjournment, and shall frame all rules and regulations authorized or required by this Act, and shall make or cause to be made such an examination and investigation at any place or places within the United States, or at a foreign port, as they may deem best to aid in the execution of this Act and the promotion of its objects.

Section 2. The duties of the National Board of Health shall be to obtain information upon matters affecting the public health, to advise the several departments of the Government, the executives of the several States, and the Commissioners of the District of Columbia, on all questions submitted by them, or whenever, in the opinion of the Board, such advice may tend to the preservation and improvement of the public health.

Section 3. That the Board of Health, with the assistance of the Academy of Science, which is hereby requested and directed to coöperate with it for that purpose, shall report to Congress at its next session, a full statement of its transactions, together with a plan for a National public health organization, which plan shall be prepared after consultation with the principal sanitary organizations, and the sanitarians of the several States of the United States, special attention being given to the subject of quarantine, both maritime and inland, and especially as to regulations which should be established between State and local systems of quarantine, and a National quarantine system.

Section 4. The sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated to pay the salaries and expenses of said Board, and to carry out the purposes of this Act.

In April of the same year $200,000 was appropriated for the construction of a refrigerating ship for the purpose of disinfecting ships and cargoes, but on June 22 of the same year it was found necessary to state the powers of the National Board of Health. This was done by an Act elaborately defining its functions. These it is unnecessary to recapitulate, the vital part of the Bill is contained in the third section, which directs the "National Board of Health to coöperate with State and municipal boards of health in the enforcement and execution of the rules and regulations as set forth, to prevent the introduction of contagious or infectious diseases into the United States from foreign countries and into one State from another and at such ports and places within the United States, where quarantine regulations exist, under the authority of the State, which in the opinion of the National Board are not sufficient to prevent the introduction of such diseases into the United States or into one State from another, the National Board of Health shall report the fact to the President of the United States who shall if in his judgment it is necessary and proper order such board of health to make such additional rules and regulations, as are necessary to prevent the introduction of such diseases into the United States from foreign countries or into one State from another which when so made and approved by the president, shall be promulgated by the National Board of Health and enforced by the sanitary authorities of the States where the State authorities will undertake to execute and enforce them; but if the State

authorities shall fail or refuse to enforce such rules and regulations the President may detail an officer or appoint a proper person for that purpose."

To carry out the functions imposed upon it the sum of five hundred thousand dollars was appropriated. Thus it would seem that the National board was constructed upon the model of the State board by its being directed to report to the President instead of the Secretary of the Treasury.

The National Board of Health has a splendid record. Brought into being by the presence of an overwhelming calamity with doubts and misgivings in regard to its real status and the fear that the Constitution would not justify its action, it achieved a success that was the most remarkable in the history of hygiene. It found Memphis a pest house and initiated the measures that made it a healthy and flourishing city. It has seldom fallen to the lot of any organization to so instantly and completely justify its existence. The report of the National Board of Health is one of the most elaborate and able productions that has been put forth by any body of men as far as my reading goes. Although a decade has now passed by, a period of great movement in sanitary matters, it is fresh and readable.

This would be expected from the array of names making the report. It undertook the mastery of the whole subject of sanitation, not merely the war against epidemic diseases. It undertook to detect the adulteration of foods and drugs. It investigated the subjects of sewerage and drainage and ventilation.

The most active and prominent of all the *dramatis personæ* among the functionaries of health under the direct rule of the National government is the organization known as the Marine-Hospital Service. This was founded in 1798, as an insurance against the calamities of sickness on the part of the employés of the commercial marine of the country. The nature of a sailor's avocation places him at the mercy of strangers, when sickness comes upon him, and a provision against that terrible misfortune is one of primary necessity. The functions of this Service have been maintained, and extended for a period nearly contemporaneous with the formation of our government. One cannot read the list of the houses of refuge which are directly constructed and managed by this Service or indirectly obtained by employing through contract the use of hospitals under the care of others, without a strong feeling of admiration for the care with which the Service is administrated. At every point of our immense shore line there seems to be provision for the sailors' necessities. This Service was placed under the supervision of the Secretary of the Treasury. The collection of the custom dues was naturally the function of this Secretary. Thus was established a closer relation between this officer and the Marine-Hospital Service. There is certainly nothing in the organization of this Service which calls for its employment, for making rules for the conduct of quarantine. But the Secretary of the Treasury when charged with certain duties in this connection has upon him the necessity of employing agents competent to perform these duties.

He finds willing and competent agents at his hand in the functionaries of an institution organized for quite a different purpose, men whose education and training already fit them for the new duties imposed upon them. Their execution of those duties has commanded the confidence of Congress, which has added, from time to time, new ones to be performed by them. The sailor himself, the most exposed of all the citizens of the Republic to the dangers of epidemics, would naturally bring the professional man who had care of him into close contact with and study of these diseases. Hence it is easy to understand how, as has been happily said, this department has, by a sort of evolution, become an important sub-department of the Government. The late Dr. John M. Woodworth took the most lively interest in this development, and contributed by his advice to the construction of rules and regulations bearing on the relations of our Government to others in the matter of quarantine.

As a specimen of such legislation we may note the following instructions:

To officers of the Customs Revenue, Medical Officers of the Marine-Hospital Service, and others whom it may concern:

The Act approved April 29, 1878, entitled, "An Act to prevent the introduction of contagious or infectious diseases into the United States," provides that no vessel coming from a foreign port or country where any contagious or infectious disease exists, nor any vessel conveying infected merchandise, shall enter any port of the United States or pass the boundary line between the United States and any foreign country, except in such manner as may be prescribed under said Act.

Attention has been called to the prevalence of a dangerous epidemic disease in Southern Russia, known as the plague, and its extremely virulent and contagious character, as manifested in the late outbreak, leaves no doubt that it is similar to, if not identical with, the "plague" which devastated the Old World in past centuries.

Because, therefore, of the danger which attaches to rags, furs, etc., as carriers of infection, the following regulations are framed, under the direction of the Secretary of the Treasury, and subject to the approval of the President, for the protection of the health of the people of the United States against the danger referred to:

Until further orders, no vessel from any port of the Black Sea, or the Sea of Azof, conveying any rags, furs, skins, hair, feathers, boxed or bailed clothing or bedding, or any similar articles liable to convey infection, nor any vessel from any port of the Mediterranean or Red Seas having on board such articles coming from Southern Russia, shall enter any port of the United States until such articles shall have been removed from the vessel to open lighters, or to some isolated locality, and the vessel disinfected and thoroughly ventilated; and the suspected articles shall be disinfected, either by chemical agents and exposure to free currents of air, or by burning, as

shall be determined in each case by the Surgeon-General of the Marine-Hospital Service.

The recognition of the rights of the States is found in the statement that "The certificate of the State or municipal quarantine officer of health may be accepted as satisfactory evidence of compliance with these regulations on the part of the vessel."

It is not my purpose to define in detail the action of the Marine-Hospital Service. But I may observe that the duties incident to quarantine have been increased and rendered more accurate as time has brought more knowledge. I might note the imposition upon the consuls at foreign ports, of the duties of inspection and report upon the condition of the vessel, cargo and passengers. The suggestion of the law requiring such action comes from the present Surgeon-General of the Marine-Hospital Service, and upon him was placed the duty of constructing the rules. When the National Board of Health came into existence, the duties incident to the enforcement of quarantine and other matters outside of those that appertained to the organization of the Marine-Hospital Service, were transferred to its jurisdiction. But it found these rules already at its hand and they were accordingly adopted. To the active energy of Dr. J. B. Hamilton we owe very largely the evolution of good methods in dealing with the matters of quarantine. One has only to read the circulars put forth to the officers scattered along our enormous coast line, and those addressed to our consuls, to recognize the careful scrutiny he has made of the situation. It is impossible in the hour at my disposal to quote from these circulars. I could only cite one as a specimen of many. But I cannot pass away from what I should say of the Service without calling attention to the land quarantine, which may be considered as a new feature of the work. During periods of panic caused by epidemics, the first movement is flight from the suspected. But when the fugitive draws nigh an uninfected region, he is warned off at the peril of his life, hence the natural origin of the shot-gun quarantine. Townships invaded by small-pox are at times thus treated. When yellow fever fastened on a locality, such a place was at once brought under the shot-gun. This barbarous method affords no relief to the stricken, and is not only disastrous to life, but destructive to vast commercial interests.

To modify this and yet give security to those beyond the seat of pestilence, was the purpose of the land quarantine.

To guard the unaffected and yet allow the exposed safe conduct when they would not infect others, was the basis of action. To carry out such a plan would of course annoy those that came under the order of such regulations as were necessary; but this would be true of any quarantine whatsoever. If properly ordered, the method is not the shot-gun policy but a substitute for it. Refuge camps, as has been said by Dr. Hamilton, are no new invention, but a quarantine camp along an inland route which provides for the detention of those flying from districts in which they have been exposed to contagious diseases in order that disinfection may be practiced upon their effects during the incubation of the disease, is a new movement in the evolution of the methods necessary to arrest epidemics. Such was Camp Perry.

When a case of yellow fever appeared among the detained, it was at once removed to the improvised hospital. That loud complaints should be made of this land quarantine, was to be expected, but time justified the plan, for in the end it was found that no place became infected by those who were filtered through its alembic. Success must be the test. Applied science must make the method. Such a place was Camp Perry. Placed almost on the line that separates Georgia from Florida, it was prepared to execute one of the recognized functions of the National Government in the regulation of commerce between the States, which is not merely the transportation of goods over a line. It takes in the relations of men. One cannot read the description by Dr. Hutton, in the Annual Report of the Marine-Hospital Service, without being convinced of the excellent arrangement of the extemporized building. A little confusion at first was soon replaced by order and military regularity. As before remarked, this scores another step in the rapid progress of development going on in sanitary matters.

There is another field of sanitary action that should be noticed in this place.

In the year 1884, the consideration of animal diseases was transferred from the care of the Secretary of the Treasury to the Commissioner of Agriculture. This change would seem to be natural. One can hardly conceive of a more uncongenial combination than a bureau of finance and one of scientific investigation. As a result of this change a bureau of animal industry was created for the study and management of contagious diseases in animals. About fifty years ago the disease known as pleuro-pneumonia appeared among cattle in this country, but it was confined to a few localities. But as the cattle industry assumed the enormous proportions that it has at the present time, the disease began to show itself in the West about ten years since.

If allowed to spread it would be difficult to measure the injury to the material interests of the Nation, taking no account of the sanitary question in its relations to human life. The activity of the Commissioner of Agriculture has been very successful in arresting the spread of the disease, especially in the West, by far the most important field for his labor. He has had more difficulty in dealing with the subject in and near the cities in the East, more jealousy of official

interference, more numerous owners of small collections, rendering the evasion of the police regulations more easy. But the results are gratifying on the whole.

Here we find our dual government capable of executing admirable work, while it is evident that the State rights can ever be a check on unwarranted action. But the general government is capable of protecting communicating States suffering from the unfriendly acts of their neighbors. The regulations of commerce at the border is a powerful engine of control in all these relations. A State refusing acquiescence in proper sanitary laws, soon finds its interest impaired by the quarantine that can be placed on it.

Again, the States themselves have established quarantine against neighboring ones where there was known to be pleuro-pneumonia among their cattle, thus reducing their ability to find a market for those that were sound. The intervention of the general government, by their inspection and disinfection, was sufficient to cause the withdrawal of this shot-gun policy.

The principle of coöperation with the State authorities was the one that became successful. The diseases being epidemic, are a matter of concern for the whole Nation.

We cannot escape the duty of destroying an invasion. If the attack is severe over any considerable surface of territory it paralyzes all local effort by the ruin it brings upon so many individuals. If it were like the destruction by a tornado or conflagration, it would not call for legislative action. The remedy, if needed, would flow from benevolence. But it does not stop here. The whole are endangered. Political boundaries do not exist for it. The invasion must be resisted. In the year 1884, money was appropriated for the bureau of animal industry to investigate and arrest, as far as possible, the extension of pleuro-pneumonia. But this did not grant to the commission the privilege of purchasing the diseased animals and then destroying them. The law as first established did not authorize the slaughter of affected animals, but only gave the right to establish quarantine, such as might be necessary to prevent the spread of contagious diseases from one State or Territory to another. It was found impossible to maintain a sufficient quarantine under the law. The disease is one that often assumes a mild and chronic form, with symptoms so moderate as to make diagnoses uncertain, and thus cases would exist capable of conveying the infection. The experience of European nations had already settled the question of the only sure method of procedure. This consists in the slaughter not only of the diseased animals, but those herding with them. If there had been an exposure, there can be no assurance that one such, when removed to other associations, may not afterwards have the disease developed. The continuance of the quarantine during the usual period of incubation is hardly a certain assurance of immunity. The exportation of animals to Great Britain was so restricted that no cattle, sheep or swine could be sent from this country except for slaughter at the landing place. Benefits of time after a voyage were thus cut off, to the great detriment of the trade.

The exportation of sheep declined from 108,652 in 1879, to 32,510 in 1884; and that of swine from 25,033 in 1879, to 4 in 1884. But the restrictions to commerce in animals were not confined to foreign lands. Our own States set bounds on the traffic. While it is impossible for any State to levy a tax or impose any form of custom duty or other methods of interfering with commerce, the health laws allow complete non-intercourse in the presence of epidemic diseases.

Quarantine can be set up even in the townships. The Commissioner of Agriculture has been able to happily supplant these absolute restrictions by better methods. Nothing, however, could be done efficiently without the consent of the States. In most of them the laws were imperfect. In the shadow of a great danger these were amended so as to coöperate with the National authorities. But it was found, as soon as an attempt was made to arrest a disease, that private efforts were sufficient to neutralize all efforts, unless a fund large enough to pay for all animals to be slaughtered, was appropriated. This the State failed to do. Attempts have been made in localities to get money by subscription to destroy some herds, from the owners of neighboring ones which were free from disease. But this failed. Congress was now asked for more money and the power to use it as the Commissioner thought best.

Accordingly, an Act was passed in 1866 placing $500,000 in the hands of the Commissioner, who might use "any part of this sum in the purchase and destruction of any diseased or exposed animals, and the quarantine of the same." Immediately after the Bill became a law, rules and regulations were drawn up and submitted to the Governors of States for their approval. Thirty-one States adopted these, and in the year 1887 the work was in full play. The magnitude of this work can be appreciated when it is learned that from August, 1886, to October 31, 1887, the inspectors of the bureau carefully examined 15,387 herds containing 117,480 animals, in districts where the disease was supposed to exist. Among these were found 798 herds, containing 10,766 animals, of which 2,235 were affected with pleuro-pneumonia. Besides these there were 2,873 head of cattle in the distillery stables of Chicago, nearly one-half of which were diseased. This work was nearly all done in the West. During the succeeding year the inspection was extended to the East, including the great cities of New York and Philadelphia. A more thorough agreement having

been reached between the States and National authorities, there were inspected during the time between January 1, 1888, and November 30 of the same year, 35,451 herds, containing 304,698 head of cattle. Of these 183,257 were tagged and registered upon the books of the office. There have been 41,361 post-mortem examinations made, and 3,380 carcasses were found to be affected with pleuro-pneumonia. The quarantine stations have been carefully guarded, and it is believed that no importation of diseased cattle has occurred. But there are many other diseases of a contagious character among other domestic animals. The most important, from which losses in money are to be counted in millions of dollars, are those of swine, notably those of hog cholera and the swine plague. In the study of these the laboratory work of the Department of Agriculture has been great and expensive.

The bacilli that are connected with these fatal diseases have been studied with great care. Acurate results have been obtained in consequence of the ability to use the pure cultures to produce the disease in animals previously healthy. Thus two distinct diseases have been diagnosticated; one affecting the bowels alone, the hog cholera, and the other having its chief seat in the lungs, and secondarily in the bowels. It has also been shown that the bacilli of hog cholera will retain its vitality in water for four months, and in the soil for two or three. Such bacteriological researches reflect great credit upon the bureau. Its studies extend to other animals, but the sphere is more limited.

It must ever be borne in mind that the organization of State defences and the execution of the methods necessary to eradicate the causes of infective or contagious diseases, are military in character. We use a common eupheuism when we call all these measures police regulations, but the proper name is war. We have an insidious and sanguinary foe to meet. The measures to be taken must be prompt and thorough. A health board may be a good council of war, but the executive officer is the important man. How important that he should be competent! But to this he must be trained.

The force to carry on the work of sanitation has a strict analogy with the structure of an army. The medical officers must have under them inspectors of various degrees of training, as well as men to fulfil still minor functions. All this has been happily indicated by the head of the Marine-Hospital Service. His plan must become the germ of the future management of the sanitary service. I do not apprehend difficulties to arise from political appointments. The methods now used cannot well be ignored. Indeed, these appointments must have the character of commissions, as in other military formations. Along with such *personnel* will be developed the machinery of war. We do not need Krupp or dynamite guns. But we do need trains of cars which will carry the most elaborate arrangement for fumigation and disinfection, as well as dwellings for the detained, ready to be transported with all the conveniences of living.

At the present time the government is building expensive vessels, but not expensive in a military sense, arranged with apparatus for disinfecting the contents of a vessel alongside of which it can be moored. The admirable Holt system furnishes the cue to all these measures.

Sanitarians at once recognized the duty of all governments to extirpate epidemic diseases in their endemic homes. But these are apt to be found among ignorant and shiftless people, often maintained by religious fanaticism.

Vast hordes of Hindoos are collected on the Ganges at special points to bathe in its sacred waters on a special day, and also to drink of them. The multitude encamped on its banks, awaiting the supreme moment of religious exaltation, defile the waters so as to render them admirably efficient for their devilish work. Beatification having been obtained, the wretched victims of superstition fly along every route, scattering the cholera over the world.

More than twenty years ago this writer, in a public address, insisted that the long arm of Europe should reach into the heart of Asia and compel these fanatics to cease consuming their own dirt. Surgeon-General Hamilton, in an excellent paper, has brought out the same thought with reference to the haunts of yellow fever.

If a band of fillibusters should land on the remotest Florida Key, the American heart would throb with rage from Alaska to Eastport. Yet we are silent when invaded by the invisible hosts who will soon destroy more lives than will occur in the most sanguinary battles. A large number of facts bearing upon the subject of hygiene are passed by for want of time in their enumeration.

The Government has shown willingness to advance in the great work of hygeine when properly approached, but does not readily take the initiative. I might cite many instances of this. I might detail the accounts of Dr. Sternberg's investigation of the application of attenuated yellow fever virus, after Pasteur's method by Dr. Domingues Freire, of Rio Janeiro, whose scientific claims were so utterly demolished that you feel pity for the victim. I might speak of the international conference for promoting uniformity of action in matters of hygeine, marking a splendid advance in the application of science to practice showing that "all the world's akin." I might detail the doings of the convention of Montgomery, and mark the influence of the Public Health Association, and of many other things showing the grand movement of the day.

But besides the great matters of external quar-

antine which are necessary to the obstruction of epidemics, there is the necessity of regulations which have been but moderately attended to, and yet are of the greatest importance.

The contagiousness of diphtheria and scarlet fever, and the known transmission of these terrible scourges by fomites has received but little attention. The disinfection of cars has not been systematically attempted, but calls for investigation and a general ruling. This matter alone will necessitate a large force of inspectors. It can hardly be done except by the National Government, which should stand guard at every State line, as well as on the outer border.

The vast questions relating to the adulteration of food should come under the same rule as other sanitary questions.

While this writer was a member of the State Board of Health of New York, it received notice of a ship having arrived from China, loaded with what the Celestials call "lie tea." It immediately took measures to have the pseudo-tea thrown into the harbor, but it was confronted with the question of jurisdiction. The owners soon became aware of its intentions, and before the machinery of law could be invoked the industrious drummers threaded the routes of commerce, and we had no "lie tea" to throw overboard.

There are also vast questions yet untouched involved in the prevention of malarial diseases. The drainage of swamps is a matter which will task the best judgment of scientists and engineers. States shrink from any consideration of the subject, appalled by its magnitude, nevertheless upon them the work must essentially fall. But pestilential swamps cross State lines, and one State may be much injured by the action of its neighbor. The difficulties surrounding these questions are prospective, but their solution will be demanded as population grows more dense.

In all this I have presented to you nothing new. To many of you the facts to which I have alluded are far more familiar than to myself. But their recital was necessary to focus the attention upon the situation. The relations of our dual government have become more clearly defined than formerly as the necessity of action has arisen. The interference of the National government with the States, in the exercise of their just rights, will always be resented, and in my judgment should be most jealously. But this does not absolve the National government from the performance of paramount duties in the various relations thus far cited.

Can a National board of health execute the functions indicated? It found itself embarrassed almost at once by its size and created an executive committee. If it undertakes to perform the duties necessary, it must organize a permanent force and be constantly in session, or divide its membership so that each one shall be the executive head of a drawer in a large bureau. This surely would be no gain over a bureau superintended by one man. The Secretary of the Treasury is that one man now. But the relation is an absurd one. In a village board of health would any one choose the banker as its head because of his trade? Has a financial functionary any conceivable relation to a scientific body, of a natural kind? The true solution of this vexed question should be found as in the end it must be, by the appointment of a single man who will give his undivided attention to this great subject. He should be to his functionaries what the Secretary of War is to his. It is not essentially desirable that he should be a medical man. Probably it would be undesirable. Our government in its concrete form represents the people, and the Secretary of War and Navy are not professional soldiers or sailors, and thus they stand between the purely professional organization and the people. My own observation has shown me that a layman on a State Board of Health is one of its most valuable members, rapidly coming into relation with the ideas of his confrères and giving assurance to the community. Moreover, the expansion which an organized system would assume needs this position. As I have said I do not fear political dangers. Indeed, I do not see that they would be other than those we incur at present. The members of the National Board of Health, drawn from civil life, might in time become subject to the baneful influence of political choice. But the Army and Navy are free from this in virtue of the commissions they hold. The medical men must be confirmed in their places by the same method. Experience has shown that the best talent can be thus secured. Surgeon-General Hamilton has developed this plan with eminent success. When a government can draw upon such men as Sternberg, and Billings, and Guiteras, it is independent of choice from civil life. The Department of Agriculture found the bureau of animal industry was altogether taken up with the consideration of animal diseases. It would seem to be cognate, but the natural outcome of such a bureau should be the improvement of animals and their financial relation to the country. The sanitary questions involved should be gathered into the same hands that wield the powers of government with reference to contagious diseases in human beings. This bureau has developed excellent scientific workers. The Marine-Hospital Service and the Army and Navy have their laboratories and pursue original investigations. The control of all should be under one head. It would thus become far more efficient. The time has come and now is when the health minister should be appointed.

I close my discourse as I began it, by saying

that the profession, both in its aggregate character as represented by this body and by its individual members, should urge on the execution of this movement, the ultimate one in our government. When this is done, this department will expand to the necessities of the case. There will be no dividing of the responsibility, and there will be constant watchfulness during the war which is inevitable. When this shall have been accomplished it will be found that of all the men chosen by the chief of our magnificent government, to aid him in carrying on its functions, the one who will have the most arduous labors to perform and the most delicate functions to execute, will be the Secretary of Sanitation.

THE ADDRESS ON MEDICINE.

Delivered at the Forty-first Annual Meeting of the American Medical Association, held in Nashville, Tenn., May 21, 1890.

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The intelligent and thoughtful physician, reasonably familiar with current medical literature, has not failed to notice the extraordinary activity in many lines of investigation, and the rapidity of changes in almost every department of practice, that characterize the present period of time. And if he could safely regard all positive assertions as facts, all changes as progress, and all progress as genuine improvement, then surely, he might justly claim the last two or three decades of time as an epoch of improvement in the science and art of medicine without a parallel in all the past centuries.

It is no part of my present purpose, however, to attempt a review of the general field of medicine, but rather to ask your attention to only a limited number of the topics and tendencies that are at present exerting an important influence on the progress of true medical science and on the results of medical practice. Every period of unusual activity of investigation and advancement in any department of the great field of medicine, may be traced to some new discovery in the collateral sciences, or to some new application of facts and physical laws already well known. Thus, the simple application of the anæsthetic properties of nitrous oxide, ether and chloroform to the prevention of pain, supplemented by the application of antiseptics and germicides for the prevention of suppuration, has not only given to the practical surgery of to-day its extraordinary development, but has enabled its votaries to boldly invade every region or cavity of the human body to remove morbid developments or to repair injuries. So too, the application of chemical and physical laws to the study of the composition and minute structure of organized tissues, both in health and disease, by the analytical processes of the chemist, and the revelations of the compound microscope and the spectroscope, not only revealed to us the minute structures and their modes of development from the simple vitalized speck of bioplasm to the most delicate and complete of animal structures, but they soon detected in morbid conditions new chemical products or ptomaines and the germs of fermentation and suppuration.

It is to these simple beginnings we owe the unparalleled activity in the application of chemistry and microscopy to biological, bacteriological, etiological, pathological, sanitary and therapeutic investigations that has characterized the last two decades. Indeed, so strongly has the medical mind become engrossed in the microscopic search for bacteria or microörganisms as causes of disease, and in the minute structural changes constituting morbid anatomy, that true pathology or the philosophy of morbid processes and the laws that govern them has been nearly lost sight of. And as a necessary coincidence of this intense search for specific causes of diseases, the mind of the practititioner has been directed more and more to the search for specific remedies for each disease, and the chemist has lost no time in supplying him with an almost endless variety of antiseptics, germicides, antipyretics, and antidotes; and when these were not found in sufficient variety among the active principles of vegetable remedies and the inorganic compounds, he has reversed his ordinary processes and begun to manufacture, synthetically, a prolific series of complex organic compounds each claimed to possess such qualities as fit it for specifically controlling some one or two important symptoms of disease, more especially pain and heat—analgesic and antipyretic.

So greatly have these tendencies influenced a large proportion of practitioners that much of the bed-side practice, especially in reference to the treatment of acute general diseases, has become little more than a clerical process. To note daily the line of *temperature* as indicated by the clinical thermometer and adjust the quantity of the favorite antipyretic in accordance therewith, and see that the patient has plenty of liquid food slightly seasoned with some alcoholic liquid at first, but steadily increased as the disease progresses, constitutes the routine; but little attention being given to the condition of the important secretory and excretory organs, to the varying conditions of vital processes in different stages of disease, or even to local pathological changes that are liable to take place in the progress of all general fevers.

If it were true that simple elevation of temperature constituted a general fever or any form of acute general disease, and that the general molecular degenerations were caused by the high temperature, as claimed by some, and even that the intestinal and other local lesions were only the

result of Nature's, so-called, effort to expel the offending material or specific cause from the system, then certainly, to note the temperature and skilfully to adjust the antipyretics with nourishment would constitute the chief duty of the physician at the bedside of his patient; and his success would depend mainly upon the accuracy of his thermometric observations and the efficiency of his antipyretics.

But abundant clinical facts, carefully observed and accurately recorded, show with the clearness of a mathematical demonstration that a general fever, instead of being simply high temperature, is a complex morbid condition involving coincident disturbances of the properties of living matter and of the metabolic or molecular movements constituting assimilation, nutrition, secretion, disintegration and excretion; the elevation or depression of temperature being only one of the many symptoms of more or less importance resulting from such complex disturbance. This is sufficiently proved by the familiar fact that though we reduce the febrile temperature three or even six times a day with our antipyretics, it rises again just as often until it has become a generally recognized fact that this class of remedies exert little or no influence on the duration of the general disease. A striking illustration of this is furnished by the statistics obtained by Dr. Hood from the records of the St. Bartholomew's and Guy's Hospitals relating to the treatment of acute articular rheumatism or rheumatic fever. In these two hospitals he found recorded over 2,000 cases, 800 of which had been treated before the introduction of salicyl compounds, antipyrin, acetanilid, salol, etc., in the treatment of febrile diseases, and the remaining 1,200 since these became the leading remedies used. By a careful analysis of these cases as recorded, Dr. Hood shows that, while the use of the class of remedies just named, afforded the patient much earlier relief from pain and lessened the temperature, it resulted in neither shortening the duration of the disease, nor lessening the number of cardiac complications or the frequency of relapses. My own clinical observations both in private practice and hospital wards, have shown that the use of the same remedies in the treatment of typhoid fever, for the control of temperature from day to day in antipyretic doses, not only does not lessen the duration of the disease but it directly increases the tendency to impairment of the respiratory function, to the much dreaded cardiac weakness, and to the supervention of sudden and unexpected collapse after the middle period of the disease. And I have been unable to find anything in the medical literature of the past few years showing that the very general use of the antipyretics under consideration in the treatment of continued fevers, had resulted in either lessening the ratio of mortality or their duration, but rather the reverse. It is obvious, therefore, that the real value of any remedy in the treatment of acute general diseases cannot be determined by its specific effect in temporarily controlling one or two prominent symptoms, but the mode of its action on the elements of the blood, on the molecular movements in the tissues and secreting structures, and on the nervous centres, must be ascertained with a reasonable degree of certainty. If it should be found that a given antipyretic and analgesic remedy relieved pain and diminished temperature by producing a direct sedative or depressing influence on the sensory, vaso-motor and trophic or heat centers of the nervous system, or by such direct effect upon the hæmoglobin or corpuscular elements of the blood as to lessen the oxygenation and decarbonization of that fluid, it is evident that its continued use from day to day through one, two or three weeks would increase the danger of parenchymatous degenerations, exhaustion, blood impoverishment and collapse; or a protracted convalescence and imperfect recovery—effects very poorly compensated by the diminished temperature and less restlessness induced by it. Physiological investigation long since demonstrated the important fact that all nerve sensibility and all metabolic or molecular changes in the living body were dependent on the presence of arterial blood containing oxygen; and later investigations have equally demonstrated that the temperature of the living body is maintained at a given normal standard by the balance between the anabolic or constructive molecular changes as heat producing, and the katabolic or retrograde and eliminative changes as heat discharging, processes, both subject to more or less modifying influence by the vaso-motor or the heat centres of the nervous system. When these several processes maintain their normal relative activity the temperature remains natural. But if the anabolic processes are diminished or increased while the katabolic changes remain natural, the temperature will fall or rise accordingly; and the same will be true if the katabolic processes diminish or increase while the anabolism remains normal. I may safely assume, therefore, that all acute general diseases or fevers accompanied by abnormal temperature, include as an essential part of their pathological processes, profound disturbance of these intricate metabolic processes in some direction; the particular direction being determined by the nature of the special cause or causes of such form of disease.

It is equally safe to assume that all antipyretic remedies produce their effects by either directly or indirectly, increasing the katabolic or heat discharging process, or by diminishing the anabolic changes, or possibly by both. I use the word *indirectly* here, for the reason that a remedy exerting a direct influence on the vaso-motor or heat nerve centers would indirectly influence the gen-

eral temperature chiefly through the heat discharging processes; while a remedy capable of so acting upon the hæmoglobin or corpuscular elements of the blood as to lessen the conversion of the hæmoglobin into oxyhæmoglobin by which the carbon dioxide is discharged and the oxygen received and carried to the systemic capillaries constituting the essential function of respiration, would thereby indirectly retard all the anabolic changes and in doing so lessen heat production. It is evident that a remedy producing its antipyretic effect by the last named method, must be used with great caution and only for limited periods of time, lest while lessening the febrile pyrexia it so far retards metabolism generally as to end in fatal parenchymatous and tissue degenerations. And yet, facts have been rapidly accumulating which render it highly probable that nearly all the complex artificially prepared organic compounds that have been successively urged upon the attention of the practitioner as efficient antipyretic and analgesic remedies during the last few years belong to this class. Abundant clinical observations and numerous experiments on animals by many careful investigators, have shown that salicylic acid and salicylates, antipyrin, kairin, acetanilid, phenacetin, exalgine, etc., all produce their antipyretic and analgesic effects by more or less direct interference with the function of the hæmoglobin of the blood, and a marked depressing or paretic effect on the sensory, vaso-motor and excito-motor nerve centres. Their effect on the corpuscular constituents of the blood is seen in the many cases of profound cyanosis already reported as having occurred during their use as remedies in the treatment of disease; and their equally direct effect on the important centres in the base of the brain and in the medulla oblongata is fairly demonstrated by the experiments of Batten and Bokenham, Botkin and Sawadowski, and others, as well as of their prompt effect in diminishing pain and nervous excitability. Their marked effect in impairing the assimilative and general metabolic processes is shown by the diminished conversion of glycogen into sugar in the liver and the muscles, as proved by Lepine and Porteret; the decided diminution in the products of nitrogenous elimination, more especially of the urea, the sulphates and phosphates; and the reduction of the mammary secretion during lactation.

The very interesting series of observations made by Riess, during the administration of antipyrin in typhoid fever, seemed to prove conclusively that the drug held in check some of the most important metabolic changes to a remarkable extent. Not only was the excretion of urea greatly diminished, but all the solid constituents of the urine were diminished, and the total quantity of urine also, to a greater extent than could be explained by the increase of cutaneous exhalation (see Dr. Cash's address).

The foregoing clinical and experimental facts, with many others that might be cited, did time permit, demonstrate that all the artificially prepared and chemically complex antipyretics recently brought into such general use are not merely antipyretics and analgesics, that is, capable of promptly controlling pyrexia and pain, but also that they are equally active retarders of nutritive and tissue metabolism, and depressants of nerve force and sensibility. In other words, their antipyretic and analgesic effects are produced by their interference with the most important metabolic processes and nervous functions on which heat production and nerve sensibility depends. The logical and necessary inference is that they cannot be used in doses sufficient for efficient antipyretic effect continuously for any considerable length of time, without seriously impairing the quality of the blood, the nutritive or general metabolic processes, and depressing the vaso-motor, cardiac and sensory nerve functions. For temporary relief in many neuralgic and spasmodic affections, and the early mitigation of pain and high temperature during the first two, three, or at most four days, of such excessively painful and active general febrile affections as acute articular rheumatism and dengue, they serve an excellent purpose by greatly lessening the suffering of the patients while they are being brought under the influence of other remedies of more curative value.

But in the group of general acute diseases, of which typhoid fever is the most important example, arising from special causes that from the beginning lessen the sensibility and natural activity of the nervous centres, impair the quality of the blood, and so interfere with tissue metabolism as to cause general molecular degenerations, thereby creating a pyrexia of from two to six weeks' duration, there is no rational indication for the use of this class of remedies. The patients seldom suffer such acute and persistent pain as to demand the use of an analgesic or even an active anodyne. The pyrexia is moderate at first, but advances persistently, and though temporarily controlled by each dose of the antipyrin or acetanilid, it as regularly returns as soon as the force of the dose is expended. Hence, to continue the desired reduction of temperature the antipyretic dose must be repeated from two to three times in the twenty-four hours, and if this is done before the natural time for commencing defervescence or approach of convalescence, the antipyretic has added so much to the impairment of respiratory and cardiac nerve force, as well as to the molecular tissue and blood degenerations naturally caused by the special cause or causes of the disease, that in very many cases a dangerous, and sometimes a fatal, degree of prostration rather suddenly supervenes some time during the third week of the disease, characterized by a frequent and weak

pulse, inefficient respiratory movements from rapidly increasing hypostatic pulmonary engorgement, a dingy or leaden hue of the surface, with sweating, impairment of the special senses, with mental apathy, and some impairment of the action of the bladder and rectum.

It being generally conceded that the natural heat discharging processes are radiation, cutaneous and pulmonary exhalations, and evacuations generally, it seems to me far more safe, in all the typhoid and lower grades of continued fevers, to relieve the excess of heat by increasing these natural processes, than by any remedies that endanger increased blood and tissue degenerations and depression of nerve force. Ample experience has demonstrated that this can be efficiently done by frequent sponge bathing with water at such temperature as is most agreeable to the patient, aided in extreme pyrexia by wrapping the patient in the cold wet sheet a few times, which can be done not only without danger of causing depression, but with a positively refreshing influence.

I am constrained, from a sense of duty, to add some comments on the *modus operandi* of another remedy extensively used in medical practice, and especially in the treatment of continued fevers. From the length of time it has been in use and the large amount used it would seem that its physiological and therapeutic effects should have been fully demonstrated long before this time. Instead of this, however, these effects still elicit expressions of opinion and modes of practice of the most varied and contradictory character. I allude to alcohol as it exists in the various fermented and distilled liquors, and exclusively as used as a remedy in the treatment of disease. Instead of spending your time on a history of the various opinions and investigations pertaining to this subject, I shall invite your attention directly to as concise answers as possible to the two following questions, viz.: What are the effects of alcohol on the functions of the more important organs and upon the constituents of the blood and tissues of the living body? What are the therapeutic indications it is capable of fulfilling in the treatment of diseases, more especially of general fevers?

In answering the first question it may be stated that alcohol, when taken into the stomach in a diluted form, undergoes no gastric digestion, but is rapidly absorbed and carried directly into the venous blood, and through it reaches first the liver and the lungs, and from thence, in the arterial blood, it is carried to every organ and tissue of the body, and some part of it is speedily eliminated, unchanged, through the lungs, kidneys and skin. This much appears settled beyond further controversy. But what becomes of the large part that cannot be recovered through the excretions and exhalations, and what effect is produced by its presence, on the constituents of the blood, on the functions of the brain and nerves, on the metabolic processes, and on the temperature of the body?

The experiments of Schulinus and Salzynski show conclusively that about ten per cent. of the alcohol taken disappears, or at least loses its identity immediately on mingling with the blood. If this sudden disappearance of 10 per cent. of the alcohol was caused by its immediate oxidation, an ordinary dose could not fail to quickly increase the heat production and proportionately increase the resulting carbon-dioxide and water. According to the accepted formula, the complete oxidation of 1 gram of absolute alcohol liberates 9 kilogram degrees of heat. Therefore, if 20 grams of alcohol were introduced into the blood of an individual, and one-tenth, or 2 grams, immediately disappear by oxidation, 18 kilogram degrees of heat should be at once added to the temperature of that fluid, with a corresponding increase in the production of carbon-dioxide and water. And if only from 2.5 to 15 per cent. was subsequently eliminated unchanged, as claimed by numerous experimenters, leaving about 17 grams of the alcohol to disappear by subsequent oxidation during the next few hours, it should liberate 153 kilogram degrees of heat more with its resultants, carbon-dioxide and water. But a careful review of all the experimentation upon this subject shows no evidence of such marked increase in either heat production or in carbon-dioxide by the presence of alcohol in the blood. On the contrary, the most recent and accurately conducted experiments of Dr. Edward T. Reichert, Professor of Physiology in the University of Pennsylvania (see *Therapeutic Gazette*, Feb. 15, 1890), show results decidedly the reverse. He performed eighteen experiments on dogs with the aid of an improved calorimeter, by which he determined the rate of both heat production and heat dissipation with the actual temperature of the animal for six consecutive hours after the administration of a given quantity of alcohol proportioned to the weight of the animal.

In sixteen of the eighteen experiments the average heat dissipation exceeded the heat production and the temperature was lowered; in only two was a reverse result obtained. In thirteen of the eighteen experiments the average heat production was diminished, while in the other five it was increased. In all but two of the experiments the average heat dissipation was also diminished, in a less ratio, however, than the diminution of heat production, and the actual resulting temperature of the animal was lowered. Dr. Reichert, during these very valuable experiments, took no note of the variations in the production of carbon-dioxide, but the aggregate results of both experimental and clinical observations during the last half century sufficiently demonstrate the fact that the production of car-

bon-dioxide, urea, phosphates, and nearly all other excretory products of metabolism or retrograde metamorphosis, and the consumption of oxygen, are diminished by the presence of alcohol in the blood.

The suggestion of Dr. Reichert and many others, that the alcohol while undergoing actual oxidation in the blood, producing both heat and carbon-dioxide, with consumption of oxygen, simultaneously diminishes the metabolism of the tissues so much that the production of both heat and carbon-dioxide from that source is so far diminished as to balance, or more than balance, the increase of these by the direct oxidation of the alcohol, does not afford a satisfactory explanation.

If, as has been demonstrated, one-tenth or more of the alcohol taken into the blood *immediately* disappears, and such disappearance is caused by an equally sudden oxidation, the increased quantity of heat and carbon-dioxide thus liberated could not escape ready detection before it could be counterbalanced either by diminished heat production from retarded tissue metabolism, or from increased heat dissipation.

And yet, neither the aggregate results of the numerous and varied experiments, nor of the abundant clinical observations, show any such primary marked increase in either the consumption of oxygen or increase of carbon-dioxide and heat. That when alcohol enters the blood diluted with water it rapidly disappears or loses its identity, there is no reason to doubt. That while present and circulating with the blood it diminishes nerve sensibility and force, lessens the average temperature, retards metabolism or molecular changes in the tissues, and lessens the aggregate of effete eliminations, is equally certain. How it disappears—what new combinations it enters into by which its identity as alcohol is lost—and how it modifies nearly all the processes and functions of the living system, are questions of the greatest importance. The element or idea that has hitherto vitiated nearly all the reasoning and deductions from the numerous clearly established facts developed by the investigations has been the purely theoretical assumption that alcohol, being a pure hydrocarbon, could undergo no change or combination in the laboratory of the living body save that of oxidation or combustion and the evolution of heat or some kind of force. Under the influence of this primary assumption each chemico-physiological investigator, though acknowledging that the presence of alcohol in the blood actually diminishes nerve force, muscular force, metabolic force, heat force, and the ordinary products of oxidation, still returns to the theoretical idea that, inasmuch as the alcohol disappears in the system, "it must undergo oxidation and evolve some kind of force." The well-known fact that alcohol possesses a strong affinity for the water and albumen of the living tissues and for the hæmoglobin and corpuscular elements of the blood, and is capable of exerting a modifying influence on the molecular condition of all these elements, seems to have received far less attention than its importance demands.

Dr. B. W. Richardson, of London, first pointed out the fact that the presence of alcohol in the blood caused alterations in the appearance of the corpuscles, causing them to become corrugated to some extent, and more disposed to adhere together.

Dr. George Harley further showed that the addition of 10 per cent. of alcohol to fresh arterial blood changed its color, prevented its re-oxygenation and destroyed its power of producing hemin crystals. The addition of 5 per cent. did not materially change the color, but it completely destroyed the capacity of the corpuscles for further oxygenation or purposes of nutrition.

Dr. Joseph Frank Payne, Vice-President of the London Pathological Society, in opening an important discussion of the subject by that body in January, 1889, stated that alcohol, when taken internally, not only speedily produced derangements of the nervous functions, but also acted directly on the tissue elements, "(1) as a functional poison, (2) as a tissue poison or destructive, (3) as a checker of oxidation." And when its action becomes persistent, or chronic, it results in hyperplasia of connective tissue, fibroid changes, fatty and tuberculous degenerations, and fatty infiltrations in almost every tissue and organ in the body. Both Dr. Payne and Dr. Lionel Beale presented microscopical sections of a liver changed by chronic alcoholism, showing not only hyperplasia of connective tissue, but also essential atrophy of the liver cells. For the purpose of gaining more knowledge concerning the action of alcohol on the hæmoglobin, and its relation to the oxygen of the blood, Dr. John D. Kales, Demonstrator of Histology in the laboratories of the medical department of the Northwestern University (Chicago Medical College), executed a series of observations with the spectroscope and microscope on blood drawn by hypodermic syringe from the heart of living rabbits and mixed with alcohol in varying proportions, from 1 to 10 per cent. of the latter. He found that when absolute alcohol in varying quantities, from 1 to 5 per cent., was mixed with the freshly drawn blood diluted with distilled water, it made no perceptible change in the oxyhæmoglobin spectral bands at ordinary atmospheric pressure and a temperature of 98° F. Neither was there any evidence of oxidation of the alcohol. But when the pressure was diminished by means of the air pump to the extent of 710 millimetres of mercury the hæmoglobin was rapidly reduced by surrendering its oxygen, which did not combine with the elements of the alcohol present, but escaped in a free state. It was further shown that the

rapidity of the reduction of the hæmoglobin increased by increasing the proportion of alcohol used. Also, when the oxyhæmoglobin was reduced in contact with the alcohol, it was less capable of re-oxygenation than when reduced without the presence of the alcohol.

As the experiments of Dr. Kales constitute an interesting item of original work, I take the liberty to append his own concise report of the same to this address.

In view of all the foregoing facts I feel justified in considering the following propositions fairly established:

1. Alcohol, when present in the blood, either combines with or causes changes in the molecular composition of the hæmoglobin, by which the natural conversion of the latter into oxyhæmoglobin is diminished, and consequently less oxygen is carried from the pulmonary to the systemic capillaries.

2. The same strong affinity of the alcohol for water and albuminoids that enables it to modify the composition and function of the hæmoglobin of the blood, also causes it to modify the molecular condition and functions of the tissue cells throughout the body, and thereby retard or lessen the aggregate of metabolic changes and their products, as shown in the diminished product of carbon-dioxide, urea, phosphates, heat, etc.

3. Both the direct effect of the alcohol on the nerve cells, and its indirect effect in lessening the amount of oxygenation of the blood, causes it to produce marked diminution of nerve sensibility and vaso-motor nerve force; or, in other words, a true anæsthetic effect upon the nerve centres.

4. It follows as a necessary conclusion from the three preceding propositions that instead of generating any kind or form of force or energy, alcohol in the blood actually diminishes every known form of force belonging to the living body; and instead of conserving the tissues, it diminishes and prevents the metabolic changes, and thereby promotes both molecular and tissue degenerations, as so uniformly seen resulting from chronic alcoholism.

Like antipyrin and other members of the group of antipyretics on which I have ventured to comment, the alcohol acts directly on the corpuscular elements of the blood, and so far diminishes the molecular tissue movements of nutrition and disintegration as to lessen heat production and favor tissue degeneration, while its action on the nerve structures is more in the direction of an anæsthetic than of an analgesic.

And hence like them, if administered in acute general diseases, by its anæsthetic properties it quiets the patient's restlessness, lessens his consciousness of suffering, and diminishes vaso-motor and excito-motor nerve force, with moderate reduction of temperature; while by its direct diminution of tissue metabolism and excretory products it favors the retention in the system of both the specific causes of disease and the natural excretory materials that should have been eliminated. And though the immediate effect is to give the patient an appearance of more comfort, the continued retention of the morbific cause, the diminished action of the excretory structures, and the diminution of oxyhæmoglobin, all serve to protract the disease and increase molecular and tissue degeneration and add to the number of fatal results.

I am well aware that the foregoing practical deductions, founded on the results of numerous and varied experimental researches and well known physiological laws, are in direct conflict with the very generally accepted doctrine that alcohol is a cardiac tonic, capable of increasing the force and efficiency of the circulation, and of conserving the normal living tissues, and, therefore, of decided value, especially in all the lower grades of general fever. But on what series of well established facts does this "very generally accepted doctrine" rest? Certainly not on any resulting from direct experiments on either animals or man in health, for all these result in showing depression of the vaso-motor and heat centres of the brain, and impairment of cardiac force in direct proportion to the quantity of alcohol in the blood. (See experiments of Drs. Martin, Ringer and Sainsbury, Reichert, and others.) Many of you are doubtless ready to say that it rests on a broad basis of direct clinical experience; but reliable results from clinical experience in the use of a remedy in the treatment of any disease can only be gained by comparing the results of an adequate number of cases in which it was used, with the results of a like number of parallel cases treated in the same manner, except with the remedy omitted. The nearest approach to such a basis for comparison that is found on record is furnished in the reports of hospital and private practice for a given period, where in certain acute general diseases alcoholic remedies were either not given or used very sparingly, and before the recent antipyretics were manufactured; and similar reports for an equal period of time when in the same diseases the antipyretics and alcoholics were freely used. The treatment of typhoid fever and pneumonia, two clearly defined acute diseases of great importance and familiar to all general practitioners, will serve the purposes of my inquiry.

As Dr. George B. Wood, in his well-known work on the Practice of Medicine, recommended the use of alcoholic remedies only in the last stages of typhoid fever, and then chiefly in the form of wine-whey, made from 1 part of sherry wine and 2 parts of milk, given in tablespoonful doses, his results may be fairly placed on the side of non-alcoholic treatment. He has stated that of the whole number of cases treated by him in

the Pennsylvania Hospital from 1850 to 1854, less than 6 per cent., or one in seventeen, died. A more marked and complete experiment was made when, in 1864, the Commissioners of Public Charity of New York City were induced, on account of the great mortality of fever patients in the Bellevue Hospital, and also for better isolation, to commence sending the typhus fever patients to Blackwell's Island, where they were placed in canvas tents under the immediate charge of Dr. A. L. Loomis. At the end of nine months the average number constantly under treatment had been seventy, or about 600 in all. Their treatment had been exclusively hygienic, consisting of ample ventilation, good air, cleanliness, and simple nourishment. No medicines and no alcoholic stimulants were used. The result was one death in seventeen cases, or only 6 per cent. (See letter of New York Correspondent in *Chicago Medical Examiner*, Vol. vi, p. 79.) In 1869, the present large building was erected to accommodate the Mercy Hospital, of Chicago. With the exception of one year, I had continuous charge of the medical wards, including rather more than half of the typhoid and other fever patients, from that time until 1886; and since the last date Dr. N. S. Davis, Jr., has divided the time with me. During these twenty years the number of typhoid fever patients admitted and treated in the wards under my charge annually, has varied from thirty to 100, making a total of more than 1,000 cases. Much the larger proportion were from the class of common laborers, and they seldom reached the hospital until in the second week in the progress of the disease, and a considerable number not until in the third week. During this whole period of time, the use of alcoholic remedies, both fermented and distilled, has been rigidly avoided in the treatment of this class of patients. The administration of the most popular internal antipyretics, antipyrin and antifebrin, was commenced by my colleague in charge of the wards, and given a fair trial during the last three years. But the cases so treated resulted in so decided an increase in the ratio of mortality, that he abandoned their use in the treatment of this variety of fever. The actual ratio of mortality for the whole number of cases treated during the twenty years was 5 per cent., or one in twenty cases; the highest ratio in any one year being one in fifteen, and the lowest one in thirty.

On the other hand, nearly all the reports from the principal hospitals, both of Europe and this country, in which alcoholic liquors are freely used in the treatment of typhoid and typhus fevers, the ratio of mortality is given at from 16 to 25 per cent., or one death in from four to seven cases.

As examples, during the three years immediately preceding the sending of typhus patients to the tents on Blackwell's Island in 1864, 908 cases had been admitted into Bellevue Hospital and treated by a liberal administration of alcoholic remedies, chiefly brandy, whisky and wines, resulting in 198 deaths, or one in four and one-half. By eliminating the number who died within forty-eight hours after admission as not really subjects of treatment, the real ratio of mortality was about one in six.

From a paper read by E. T. Edgerly, M.D., before the Clinical Society of Cook County Hospital, Chicago, February 6, 1890, we learn that 161 cases of typhoid fever had been treated in the regular medical wards of that hospital during the year 1889, of whom 110 were males, and fifty-one females. Among the remedies usually used were mentioned antipyrin and antifebrin as antipyretics, and alcohol as a stimulant. The number of deaths was twenty-seven, or one in six cases, *i. e.*, about the same as obtained in Bellevue twenty years before the internal antipyretics had been manufactured.

The official annual report of the Cincinnati Hospital for the year 1886, states that forty-seven cases of typhoid fever were treated during the year, of which seven died, or one in 6.7. In the report of the Garfield Memorial Hospital at Washington for the year 1889, the number of typhoid fever patients admitted is stated at twenty-two, of whom five died, or one in 4.4.

The foregoing clinical statistics are sufficient to show that the ordinary use of alcoholics and the more recent internal antipyretic remedies in the treatment of typhoid fever pretty uniformly results in one death for every four to seven cases treated; while cases of the same fever treated without any use of these remedies result in only one death for every seventeen to twenty cases.

So far as I have been able to gather reliable clinical data for comparing the results of the treatment of pneumonia, or as it is more generally called pneumonic fever, by the very general use of antipyrin, antifebrin, etc., for controlling the high temperature, and alcoholic liquors as cardiac tonics, with cases of the same disease treated without the use of any of these remedies, they show equally striking and important differences. Thus, the *Medical News*, of Philadelphia, December 11, 1886, stated that "the ratio of mortality from pneumonia in the large general hospitals of this country is rarely below, more often above, 25 per cent." In the Pennsylvania Hospital during the years 1884–85–86, the number of cases of pneumonia treated was eighty-eight, with thirty deaths, or 34 per cent. In the same hospital during the years 1845–46–47, the number treated was twenty-five, with four deaths, or 16 per cent.; less than half the ratio of the recent period (Osler).

The statistics of 1,000 cases of lobar pneumonia treated in the Massachusetts General Hospital, Boston, from 1822 to 1889, as compiled by Drs. C. W. Townsend and A. Corlidge, Jr., give an average mortality for the whole period of 25

per cent. But dividing the time into decennial periods, they state that "the mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade." In the annual report of the Supervising Surgeon-General of the U. S. Marine-Hospital Service for 1888, it is stated that the whole number of cases of pneumonia treated in the several Marine-Hospitals, under that Service, from 1880 to 1887, inclusive, was 1,649, of which 311 died, or 18.8 per cent.

In the Cincinnati Hospital report for 1886, the number of cases of lobar pneumonia treated is stated at forty-two, of which sixteen died, or 38 per cent. Dr. Ludwig Hektoen reports, as treated in the Cook County Hospital, Chicago, during 1889, of lobar pneumonia seventy-six cases and of lobular pneumonia four cases—total eighty cases, of which twenty-nine died, or 36 per cent. Dr. C. W. McIntyre, house physician, reports fourteen cases of pneumonia treated in my half of the medical wards of the Mercy Hospital, Chicago, during the year 1889, of which one died. In the same wards of that hospital during the last ten years, the average ratio of deaths from pneumonia has been about 12 per cent. No alcoholic and very little internal antipyretic remedies have been used in the treatment.

I am well aware that the foregoing fragmentary statistics in regard to both typhoid fever and pneumonia, afford no adequate or reliable basis for determining the value of different modes of treating these important diseases; and I have cited them for no such purpose. But I have simply copied them from such sources as were at hand, to show, first, that the very general use of the complex artificially formed antipyretics (antipyrin, etc.), in the treatment of continued fevers, including pneumonia, in addition to the liberal use of alcoholic (so-called) stimulants, has not been accompanied by any decrease in the ratio of mortality or in the duration of these diseases. On the contrary, so far as they show any change it is in the direction of increase in both particulars. And second, so far as they include results obtained by treating many cases of the same forms of disease without any use of the remedies named, the ratio of mortality has been reduced in so marked a degree, as to force the conviction that their use in the treatment would have been positively injurious. Consequently our appeal from the clearly established deductions from direct experiments concerning the physiological and pathological action of the remedies under consideration to the domain of clinical experience in their use shows, instead of conflict, entire harmony in the results.

Mere theoretical opinions have ever exerted a dominating, and often an injurious influence over the administration of remedies in the treatment of disease; and the present decade of time shows no exception to this rule.

The theoretical dogma that all disease consisted in primary irritation, and the maxim, *ubi irritatio ubi fluxus*, that led, during the last part of the last century, to the rigid antiphlogistic system of treatment, with bleeding, evacuants and low diet for its basis, was not enforced with more magisterial authority for the greater part of the first half of the present century—or until it was overthrown by its own excesses—than did the equally theoretical assumption following it, that all disease is debility or diminution of life (Chambers), and all acute diseases must run their course, establish and enforce the practice of supporting the patient by food and so-called stimulants until the disease had completed its course which still holds sway, though being rapidly undermined by the recent antipyretic theories and the still more recent discoveries in etiology, relating to specific causes and specific remedies. Therefore, to-day, we are still endeavoring to support our patients with food, fresh air, and alcoholics; while we combat the pyrexia, and attempt to nullify the specific causes, with larger and more dangerous doses of medicine than were given in the most heroic period of the antiphlogistic system. In other words, while we are, with great propriety, insisting that our fever patients must have proper food and the most free access to pure air, we are giving them such doses of alcohol and internal antipyretics as directly diminish the capacity of the hæmoglobin to use the air, and so far diminish the metabolic tissue changes as to retard the normal appropriation of the food, while they equally depress the vaso-motor and respiratory nerve functions. Need we be surprised, therefore, that the results show an increasing rather than a decreasing mortality? The fundamental error consists in using special remedies for the control of particular symptoms, or the removal of specific causes, without an adequate knowledge of their influence on the blood and the various processes and functions of the living body.

If we would reach the highest degree of success in the treatment of acute general diseases, we must keep distinctly in mind the following propositions: 1. We must as early as practicable separate the patient from the further action of both the specific and predisposing causes of his disease by surrounding him with pure air and as perfect sanitary conditions as possible; and as the living animal system uniformly tends to either destroy or eliminate the specific morbific causes by its own metabolic changes, we should carefully avoid the use of such remedies as either directly or indirectly retard or prevent such normal metabolic processes, even for the repression of one or more prominent symptoms. On the contrary, we must use such general alterative and antiseptic remedies as are known to sustain and correct such processes, and thereby aid in hastening the destruction or elimination of the disturbing *materies morbi*, whether they consist of living germs, chemical ptomaines or leucomaines, or

only excretory matters abnormally retained in the system.

2. As the pyrexia or high temperature results mostly from interference with the processes of heat dissipation, especially in the ordinary continued fevers, we must further aid in restoring these processes by gently promoting natural elimination and the direct abstraction of heat by sponge baths, and in excessive cases by wrapping in the cold wet sheet, all of which exert a restorative influence on the vaso-motor, cardiac, and respiratory nerve centres, while, with equal care, we avoid administering such doses of internal antipyretics and alcoholics as diminish heat production by retarding both blood and tissue metabolism, and equally depress nerve sensibility and force.

3. Again, as every specific cause capable of producing the complex assemblage of morbid phenomena that constitute a general fever, has displayed a tendency to induce special local morbid conditions in some one or more of the important tissues or organs during the progress of the general disease, as in the glands of the ilium, mesentery and spleen in typhoid; the stomach, duodenum and liver in periodical and yellow fevers, etc., we must early and accurately use such remedies as palliate or modify these local developments wherever they may be manifested, and thereby prevent such structural changes in these directions as might otherwise end in fatal exhaustion.

4. Finally, as all acute morbid processes, when established, are progressive through the successive stages of increase, culmination and decline or destruction of the patient, we must carefully adjust both our remedial agents and nutrient materials to the actual stage of progress of the disease and the capacity of the patient to receive and appropriate the same; ever remembering that the same remedial agent that might be of great value in the first stage, might be injurious or even destructive if used at the stage of culmination, or still more in that of decline. Hence specific remedies for acute general diseases can be rationally or successfully used only when aimed at the destruction or elimination of the specific causes and in the first stage of the morbid processes. Indeed, the chief benefits thus far derived from the use of antiseptics and germicides, have been as preventives in the incubative and prodromic stages, rather than as curatives after active morbid processes have become manifest.

It required much careful clinical observation aided by some analytical and experimental work, during the first thirteen years of my professional life, to gain a clear comprehension of the foregoing general propositions or indications for the management of acute general diseases, but they have served as my general guide during the forty years of constant practice that have intervened since; and with results that have neither diminished my faith in the efficacy of remedial agents when properly used, nor the confidence of the community in which I have continuously lived and practiced the healing art. I do not desire to be understood as persistently using the same remedial agents all these last forty years; but I do mean that the correct principles or indications for the treatment of the different stages of any given disease have remained and always will remain the same; while our choice of individual remedial agents for fulfilling those indications may be influenced by every addition to our knowledge of etiology, materia medica and therapeutics.

If the forgoing review of some of the most important items presented in the field of the practical medicine of the present time, should lead you or any considerable number in the profession, to a closer study and thereby a clearer understanding of the real *modus operandi* of the remedial agents used in the treatment of acute general diseases, I shall be amply repaid for my time and labor, and you will cheerfully excuse me for having trespassed upon your time so long.

ADDRESS ON STATE MEDICINE.

Delivered at the Forty-first Annual Meeting of the American Medical Association, Nashville, Tenn., May 21, 1890.

BY ALFRED L. CARROLL, M.D.,
OF NEW YORK.

In appearing before you, under the mandate of your committee that I should give an Address on State Medicine, I feel like a culprit about to be tried for obtaining your attention on false pretenses, with the additional discomfort of knowing that the most ingeniously unscrupulous member of the metropolitan Bar could not, by the utmost stretch of his professionally elastic conscience, find aught to plead in my defense. For my crime is deliberate and with malice aforethought.

When I was informed of the duty imposed upon me, I at first contemplated the fulfilment of the task; but considering the portentous range of State Medicine—which embraces all the possible relations of our profession to the commonwealth, including medical jurisprudence, medical legislation of every sort, national or international, and sundry other collateral subjects, beside public hygiene—it became evident that the briefest essay to cover such a field would be somewhat longer than a Mongolian melodrama, which occupies a week or two in its performance, and I feared that after the first forty-eight hours you might begin to grow weary. I therefore determined to confine myself to the comparatively small scope of public sanitary administration; and with this limitation, and sedulous concentration, I may hope to conclude a superficial sketch before a very late bedtime.

To the average intelligence, sanitary science has come to mean only a certain smattering of sanitary engineering, and this solely as regards sewerage and plumbing work; to the exceptionally specialized scientific mind, its definition is conterminous with the artificial cultures and stainings of the bacteriological laboratory. Avoiding these extremes of macro-mechanics and micro-biology, my present purpose is to discuss sanitation as concerning the things which the State may properly do for the preservation of health.

There is a wide difference between what we might do, theoretically, and what we can do, practically; and this difference is not always borne in mind by those who with laudable intentions seek to antedate a hygienic Utopia. We could doubtless abolish communicable diseases by seizing and cremating all infected persons and things simultaneously throughout the world; but it is more than doubtful if the public at large would placidly consent to such a general holocaust. We might theoretically save thousands of infants from falling victims to improper feeding and parental mismanagement, if we could assume supreme control of them; but not even the New York Society for the Prevention of Cruelty to Children has yet proposed to take all babies away from their mothers—its powers being apparently directed to preventing their earning a comfortable livelihood at a later age.

We might stamp out syphilitic infection, if legal restrictions could be made to enter the innermost recesses of private life and preside over all sexual relations; but experience has proven that, although we may vastly diminish the avowed channels of its dissemination, clandestine prostitution and more indirect modes of transmission will foil the completion of our precautionary measures as long as human nature rests upon an anatomical basis. We might even effect a scientifically progressive improvement of mankind, if we could enforce the stirpicultural selection employed by breeders of the lower animals; but the marriageable age is apt to be denominated by sentimental affinities, and the loving fancies of youth's springtide are beyond the reach of our autumnal philosophy. An absolutely rigorous Chinese-wall quarantine of exclusion, if it were possible, might work preventive wonders; but in the needs of civilized communities some commercial interests are even more important than the dangers which may accompany them, and while waiting for the altruistic sanitary millennium when exportation rather than importation of disease will be checked, our principal safeguard must lie in the abatement of the local insanitary conditions which furnish a soil for the implantation and multiplication of the *materies morbi*. Medical inspection and isolation of the infectively sick, with disinfection of contaminated things, will always be prudent; but the antiquated mockery of quarantines is as ineffectual as it is vexatious, and must ere long be abandoned by all intelligent nations.

Since the days of the old Crusades, fanaticism has played a stimulating part in the inception of great enterprises, and now, as then, in all new efforts to promote the general weal, unbridled energy tends to overleap the bounds of wisdom, and sometimes needs restraint. In our modern crusade for the glorification of the Temple of Health, the campaign was sagely outlined by such great chieftains as Chadwick, Farr, Parkes, Simon, and others; yet lesser leaders of brigades or companies are here and there found, whose impulsive valor outstrips discretion, and not only embitters the antagonism of our foes, but impedes the advance of our standard. To drop the metaphor, we should remember that sanitary science is still in its infancy, and that until our knowledge of etiology shall be far more certain, we must be cautious lest undigested dogmatism, founded on hypotheses, arouse opposition and ridicule from the people whom we wish to benefit. Even now, under enactments which in several of our States make health-boards legislative bodies, and exempt their decisions from appeal or review, hard and fast rules are often framed from individual opinions, unsupported by demonstrable facts, and things are done which would hardly be tolerated elsewhere. Under a constitutional monarchy, the "liberty of the subject" must be maintained; but as we are all sovereigns here, there are no "subjects" to protest, and consequently no personal rights which any officials, from policemen down to State legislators, are bound to respect; the theory of our democratic system apparently presupposing that a public appointment necessarily carries with it the sudden inspiration of perfect wisdom, unbiased by any previous study of the scientific problems involved. In villages, where health-boards of laymen are appointed from year to year by not always sapient trustees; in rural townships, where supervisors and justices of the peace constitute, ex-officio, the local boards—even in cities wherein political considerations are not altogether dissociated from sanitary organizations—a little knowledge may be a dangerous thing when clothed with brief authority, and is almost sure to be an obstacle to advancement of understanding or improvement of methods.

The proper function of sanitary boards in their relation to the affairs of individuals is to prohibit or abate whatever is unmistakably perilous to public health, not to assume a finality of dictation. In their supervisory capacity, it is within their legitimate province to see that architectural and engineering plans, in respect of domiciliary drainage, refuse-disposal, and other essentials for human habitation, satisfy the sanitary require-

ments whereon all authorities are agreed; but the diversities of opinion among experts in the constructive arts as to the best manner of mechanically satisfying these requirements, testify to the unwisdom of insisting upon particular specifications. As an abstract proposition, we may admit that a room devoid of cornice, carpet, curtains, upholstered furniture, or other lodging place for possibly infected dust, would be most easily kept in hygienic safety; it has not, however, thus far been seriously proposed to deprive luxury-loving millionnaires of their esthetic decorations and multitudinous bric-a-brac, and to confine them to four plain walls and a bare floor, with a few hard wood chairs, and an iron bedstead for all equipment—although it has been officially urged that consumptive invalids should be so unornately housed, and although, in sundry places, alcoves and other irregularities in the shape of apartments are proscribed by formal resolution, while school children are left with a hundred cubic feet of space per capita. In my own enlightened metropolis—where, by a singular exercise of legislative omniscience, the President of the Health Department must not be a physician, and the medical member of the commission is in the position of a vulgar fraction with an insignificant denominator—no unofficial citizen, be he never so skilled in sanitary theory and practice, may let his invention transcend certain established rules, though he build solely for his own residence. Some of you may remember that in the International Health Exhibition at London, in 1884, there was shown a model "sanitary house," constructed under the special joint supervision of the best known practical sanitarians in England. It is human to err, and of course no scheme can be so perfect as to escape criticism in some details; but one might at least suppose that men of such repute as Corfield, Douglas Galton, Rogers Field, and Ernest Turner, could be trusted to plan a simple edifice which would not gravely threaten the lives of its inmates. Nevertheless, one of the most competent inspectors of our Health Department told me that under the regulations of the board, the erection of such a house would not be permitted in New York. Per contra, some of the plumbing specifications inflexibly ordained in several of our cities are distrusted, if not condemned, by sanitarians abroad.

To define more clearly my meaning as regards interference in private life: While I concede the necessity of giving to boards of health discretionary control over many things which cannot be foreseen, and which "in their judgment" are "detrimental to public health," I submit that such judgment should be founded on undeniable facts, and that the "police power" of the Legislature, which is delegated to these boards for an explicitly circumscribed purpose, can equitably supersede written law only in cases of "dire emergency." I do not wish to contend for the right of the individual to injure his own health, much less to do aught which injures the health of his neighbors; but I do insist that we should be very sure that our favorite way of attempting to solve a given problem is the only safe way, before we force him to adopt it; and I more than doubt the justifiability of preventing him from eating oleomargarin or drinking skimmed milk, if he knowingly choose to do so. It should be remembered that in all sanitary legislation danger to "public health" is the fundamental reason and excuse for official intervention. With this in view, domiciliary intrusion may be requisite to abate conditions which can extend their baleful effects to the surrounding population; a pardonable latitude of interpretation may enable us to protect minors and other persons incapable of protecting themselves from manifestly deleterious influences, forasmuch as the future, if not the present, sanitary welfare of the community is therein concerned; but ours is not a paternal government, and the widest liberty of judgment and action consistent with public safety is the birthright of every citizen.

It is everywhere the tendency of humanity to exaggerate possibilities into probabilities, and probabilities into certainties, and in this country, more than in most others, there is an intolerance of dissent, inherited, perhaps, from the early Puritanical settlers, whose claim to rule themselves included incidentally power to rule everybody else. The average American is loth to accept other people's ideas; but when he evolves from his inner consciousness one of his own—whether it concern total abstinence or the public necessity of hops in beer, the cruelty of putting a turtle on its back or the morality of theatrical posters, the encouragement of charlatanism or the suppression of cigarettes—is usually impelled to rush incontinently to his State Legislature with a Bill to compel all his compatriots to live according to his private opinions; and if there be enough of him to suggest a captivable "floating vote" or an opportunity for "protection" of some local industry, the chances are that his Bill will become an Act, with an amendment authorizing the construction of a railway from nowhence to nowhither, or the incorporation of a politically assessable "trust." As a result, we have a statutory hodge-podge, going too far in one direction, not far enough in another; here dividing inseparable duties between antagonistic bureaus, there imposing incongruous obligations upon a single department; leading sometimes on the one hand, to inefficiency, and on the other, to an excess of authority little short of despotism.

The sanitary duties of the State to the public consist in protecting the purity of soil, air, water, and food, and guarding against the propagation

of preventable disease, as far as may be practicable. In urban communities, these duties involve drainage, paving and cleansing of streets, an adequate system of sewerage and scavenging, and a sufficient and wholesome water supply, as well as the supervision of food-purveying and the abatement of certain nuisances. In most cities, however, the principal parts of municipal hygiene are assigned to independent boards, organized chiefly for the benefit of practical politicians and contractors. Drainage, like the snakes in Ireland, is conspicuous by its absence; with a very few honorable exceptions, our pavements are examples of what should be avoided, and their cleansing is left to the casual operation of natural laws; sewerage and the ultimate disposal of sewage are oftener productive of mischief than of safety; scavenging affords an unearned increment of income to numerous exiles from verdant Erin or sunny Italy; and of the sources of water supply to many of our municipalities, if the reports of chemists and inspectors are to be believed, the less said the better, out of consideration for the sensitive susceptibilities of "teetotallers." In these matters, sanitary advice is seldom sought, and if proffered, is commonly unheeded.

The dangers from the aggregation of dead bodies in cemeteries and consequent pollution of soil, air, and often of water supply—especially in rapidly growing communities where habitations of the living extend around burial-grounds—have been too often exposed to need recital here; but these are usually chartered evils, hedged about by popular sentiment, and beyond the direct control of boards of health, unless the harm which ought to have been prevented has actually and irremediably occurred. We have not even the statutory limitations of the area and depth of graves and the intervals of reopening, which exist in nearly all European countries; nor can we enforce the salutary provision that when cemeteries are abandoned they shall not be used for dwelling places.

On the other side of the question, boards of health are in many instances charged with, or voluntarily assume, functions foreign to their proper purpose. The examination and licensing of practitioners, and the direction of the curricula of medical schools, howsoever desirable in themselves, pertain to curative rather than to preventive medicine, and would be more appropriately allotted, as they are in older countries, to another department of the State than that which is created to preserve people in health, not to prescribe their treatment when they are ill.

In the registration of vital statistics, again, boards of health are burdened by legislative action with details which in no wise belong to them. The sanitarian is interested in learning how many children of each sex are born, and, in a composite population like ours, the race or nationality from which they spring. He may even take an indirect and somewhat sentimental interest in their legitimacy or illegitimacy, but he cares nothing for their names or those of their parents. He wishes to know the number of deaths at different ages and the causes thereof, as far as the more than occasional incertitude of diagnosis can yield such information; the occupations and local habitations of the decedents also are useful items for his calculations; but with their pedigrees for two or three generations he has no more business than with their bank accounts. All these genealogical particulars, which serve only for the identification of the individual, are of exclusively forensic purport, needful to decide litigations about inheritance of property, and, therefore, of value to citizens with pecuniary expectations and poor relations, but have no more connection with public health than the legal technicalities of drafting a will or framing an indictment. And yet, to enable boards of health to perform such inappropriate work, the already overtaxed physician is often called upon to collect personal biographies and family histories, under penalty of fine or imprisonment if he fail in his capacity as an amateur census taker. If he attend a charity patient in parturition, he is expected to record the names, ages, birthplaces and occupations of both parents, the mother's maiden name, and sundry other domestic circumstances, and, unless an immediate agreement be reached as to the baptism of the infant, to make future unremunerated visits in order to report its prænomen. Similarly, after his professional services have been brought to a close by the death of a client, he is held responsible for the completeness of the record of that client's birth, parentage, social condition, length of residence in his or her last abode, the number of persons living under the same roof, and divers collateral formalities which are equally impertinent, in addition to certifying the cause of the demise. To cap the climax of irrelevancy, sanitary bureaus are required to register full, true and particular accounts of all persons entering the estate of wedlock, for which accounts they are empowered to exercise compulsion on clergymen and magistrates, notwithstanding that in the State where this enactment originated neither a civil nor a religious ceremony is necessary to constitute a lawful marriage, and that the Act which imposes such clerical eccentricities was titularly one "for the preservation of the public health."

Aside from the evident injustice of demanding from medical practitioners unpaid services outside of their vocation, some of the methods adopted tend to defeat their own purposes. For the registration of births reliance has been virtually placed upon the obstetrician alone; but in the population at large nearly half of these events occur without

medical attendance, under the covert auspices of unqualified midwives as ignorant of law as of physic, or frequently among pluriparæ of the poorer class, with no extraneous aid beyond that lent by an obliging neighbor. These commonly escape registration and render our records worse than worthless, because misleading. Even with the elaborate machinery of the Health Department of the city of New York, the published birth-rate is so far below the mortality that if it had the slightest pretense of accuracy, philanthropic statisticians would regard with dismay the approaching extinction of the native population. Despite the energy and industry of the registrar, despite the pains and penalties threatened for all derelictions, it is probable that at least 30 per cent. of the natality is consigned to oblivion. Obviously, to secure full returns, we should have recourse, in the case of a birth, to the parents or custodian of the child; in the case of a death, to the undertaker or other person conducting the funeral, who, as a condition for obtaining a burial permit, must present the stipulated form of record, including the medical certificate. If the registration of marriages is to be attempted at all under the inconsistent legislation of some of our States, it should be transferred to a different recording department, and could not then be made complete unless the bridegrooms and brides, for the benefit of whom and of their prospective offspring it is intended, report their connubial contracts.

Another usurpation of authority which seems to me to be quite indefensible is the ordinance, enforced by many boards of health, compelling physicians to report all cases of infectious disease occurring in their practice. In New York, especially, this conflicts with a State law which forbids the revelation of any information obtained in medical relations with a patient, and places the practitioner between the horns of a dilemma involving a suit for damages if he make the report, or a heavy fine if he do not. Moreover, the popular fear of forcible bureaucratic invasion leads to concealment of contagious cases, without medical care, and thus, perhaps, to an increased morbility, if not mortality, from the very maladies which it is desired to limit. Nor is this popular fear altogether unfounded, in view of the proclivity sometimes shown by sanitary officers to interfere in questions of diagnosis and treatment. Cases of measles have been sent to small-pox hospitals; remittent has been officially pronounced yellow fever, and the patient removed to a public institution; a physician of high standing has been imprisoned without process of law for differing in opinion from a sanitary inspector as to the nature of an ailment; and other less glaring intrusions into the domain of private practice have been annoyingly frequent. Among ignorant or economical people, cases of measles or scarlatina, unless very severe, are often carried to convalescence under purely domestic management; mild attacks of diphtheria are unrecognized, or treated with the traditional red flannel bandage and somebody's patent throat-lozenges; variola has repeatedly been hidden from observation until its extension forced it into notice; comparatively few cases of enteric fever in poor neighborhoods are brought to professional recognition until infection of the environment has already happened. It is, of course, of great consequence for the public safety that early notification of the existence of infectious disease should be given; but with regard to both efficiency and equity the onus of giving this information should rest upon the householder or head of the family in which it exists. The State has a right to declare that none of its residents shall knowingly conceal upon his premises a source of peril to the community; it has no right to force a visiting physician to violate professional confidence or to act as an unsalaried detective.

The demonstrated association of microzymes with a few communicable maladies has suggested the possibility, perhaps the probability, of their association with others in which they have not yet been detected, and the borders of the prophylacteries of the bacteriologists have been enlarged to cover all infectious, and peradventure some non-infectious, disorders, under the somewhat halting syllogism: Bacteria are found in some diseases; the diseases in which bacteria are found are infectious; ergo, all infectious diseases must be caused by bacteria; and to confer plausibility on the *petitio principii*, the same microörganism —as, for instance, the staphylococcus pyogenes— is credited, or debited, with the production of several different ailments. Hence has arisen an almost acrimonious controversy as to whether a disinfectant must necessarily be a germicide, or whether an antiseptic sterilization of the medium, or a chemical neutralization of the ptomainal product of fermentation, may serve the same purpose. In spite of the logic of past experience the formerly vaunted virtues of copperas, carbolic acid, and the milder metallic chlorides and sulphates are now denied; iodoform is falling into worse than its original bad odor; sulphur dioxide is beginning to be distrusted; and discussion waxes warm over the comparative merits of peroxide of hydrogen, chloride of lime, beta-naphthol, hydrofluoric acid, fluosilicates, benzoate of methyl, mercuric ethyl, mercuric chloride or iodide, cyanide of mercury and zinc, and a daily increasing host of other micro-murderous substances, with a decided preference for the most violently toxic among them, until, even in surgery, it is becoming a delicate task to draw the line between antisepsis and homicide.

The discovery of the tubercle bacillus has so filled the minds of many pathologists as to ex

clude the question if there may not be an antecedent morbid condition which produces a habitat for the microphyte, and arguments apparently pointing to the influence of heredity or other etiological factors are met by the hypothesis that the bacillus may be implanted at or before birth and remain latent for years, nay, through an entire generation; and the morphological twinship of this bacillus with that found in leprosy is used, not in hesitation as to its specific pathogenic power, but to erect a family relation between the two diseases. But even if we were surer than we now are of the bacteriological causation of tuberculosis, its abolition by municipal ordinance would hardly be practicable. The majority of wayfaring poitrinnaires have not had a careful physical examination and skilled diagnosis of their disease, and have neither the means nor the inclination to carry about with them patent disinfecting pocket spittoons; factory operatives, despite what they consider as "a bad cold," will continue as long as possible to earn a living for their families; much of our clothing will be made by phthisical tailors and sempstresses; chronic consumptives will resort to churches, theatres and hotels; we ourselves shall send patients by "palace cars" and "ocean greyhounds" to other climates; and indiscriminate expectoration will probably defy sanitary precept as it has long defied social objurgation. Furthermore, since tubercle bacilli are found also in the fæces and urine, the detrusion of either of these excretions, save in distant disinfected solitude, must be prohibited to satisfy the fastidious bacteriomaniac.

The little explored field of the pathology of the lower animals gives glimpses of the ancestry and evolution of some of the diseases of mankind, and may in time furnish much help to preventive medicine. Already we have learned that cattle are subject to tuberculosis, and we suspect that the *materies morbi* is often conveyed to man through their milk or meat; indeed, according to the researches of Dr. E. F. Brush, human tuberculosis has nowhere prevailed until after the introduction of milch cattle, But, unfortunately, these animals frequently present no recognizable symptoms of the malady with which they are afflicted, and the diagnosis can only be made post-mortem—a method scarcely within the permissible scope of dairy inspection. The investigation of the "Hendon" epizootic, and subsequent observations, indicate the possibility that scarlatina may arise from an eruptive disease of the cow, though whether this disease is contracted from human patients, or spontaneous in the brute, is a question for further inquiry. The alleged susceptibility of the domestic mouse to the scarlatinal virus may likewise have some bearing upon the occasionally mysterious appearance of the disorder; that dogs and cats may transport the infection, even if they do not suffer from a modified form of the exanthem, is an accepted doctrine. Diphtheria affects several genera of animals, notably barnyard fowls and pigeons. We know, if not the primal origin, the proximate sources of glanders, hydrophobia, anthrax, actinomycosis; we have become acquainted with the Oriental filaria sanguinis and its transference to drinking-water by the mosquito; with the canine echinococcus and the porcine cysticercus; we are still debating whether the hog gets trichinæ from the rat, or *vice versa;* cases of entero-colitis in infants and infectious aphthæ in adults have been traced to "foot and mouth disease" in kine; profound anæmia is induced by the anchylostomum duodenale, the embryos of which lead an independent aqueous existence, undergoing various changes of form and habit; the distomum hæmatobium passes through multitudinous transformations, and inhabits temporarily the bodies of fish, molluscs, or small crustaceans, before it can excite hæmaturia or "Egyptian dysentery" in the human system; and, beyond these grosser parasites, we may yet learn that the contagia of other diseases have their intermediate hosts and transitional modifications.

From the vegetable as well as from the animal kingdom, some already known, and mayhap some yet unknown, pathogenic elements may invade our diet, and, to an extent commensurate with our actual knowledge, sanitary administration is justified in controlling the public food supply. The sale of diseased food may properly be stopped —with a saving clause touching *paté de foie gras* and its epicurean congeners; decomposing food may be condemned (except, perhaps, in the case of "high" game suppers), because we know something, and are daily learning more, of the alkaloids of putrefaction; adulterations come within our ken if they be directly or indirectly injurious to health, but mere trade frauds, such as the admixture of flour with mustard, or chicory with coffee, fall more fittingly under the jurisdiction of statutory law, which is quite competent to deal with them. I cannot agree with an acquaintance of mine in the public sanitary service who, being himself a dyspeptic, classes foods according to their comparative digestibility, and holds that strawberries should be declared dangerous to public health because they give him urticaria.

So with regard to the abatement of nuisances, of which the sanitary and legal definitions differ widely. The latter includes anything which impairs the enjoyment of life and property; the former concerns only things which may be deleterious to the health of the community, and cannot by the most forced construction be made to comprise the inconvenience of cock-crowing or piano-practice. Noxious trades should be controlled and, if necessary, suppressed, by sanitary authority, but an odor from a manufacturing pro-

cess may be disagreeable without being dangerous to health, and in such case the remedy lies elsewhere.

Waning time admonishes me to curtail a list of examples which might be extended almost indefinitely, but I have perhaps said enough to support the conclusion forced upon me by study and experience, which is this: Sanitary administration, like all other governmental intervention in a free country, can be legitimately exercised alone for the welfare of the community, interfering with the individual only when his actions imperil his neighbor. Bearing always in mind the limitations of our present knowledge, our sanitary regulations should be cautiously based upon established truths, and executed with scrupulous discretion. The position of health officer should everywhere be a career, not an episode, and for this he should be specially trained, and his tenure of office should depend solely on his efficiency. For the real advancement of hygiene, the people themselves must be educated to coöperate with us for their own good; every avoidable attempt at coercion arouses opposition and retards the end we have in view.

In these propositions I may be at variance with some enthusiastic sanitarians for whose conscientiousness of opinion I entertain the greatest respect; but I believe that I shall have the concurrence of the majority of the profession and of the intelligent public.

MEDICAL PROGRESS.

SUGARS AS DIURETICS.—An interesting communication on this subject is made by DR. MEILACH as the result of experiments performed in the therapeutical laboratory of the Cochin Hospital. Lactose and glucose are the most powerful diuretic sugars. These may be termed renal diuretics; injected in the veins of animals they produce no increase of pressure, and no corresponding alteration of pulse when ingested by man. Diuresis is produced without the appearance of the lactose or glucose in the urine; these substances are consumed in the organism, and thus we have physiological medicaments serving at the same time as food; they possess an advantage over caffeine in producing no nervous derangement. The discharge of urine exceeds the quantity of fluids ingested, the diuresis being produced by a kind of dehydration of the blood. The diuresis reaches its maximum in cases of dropsy, of cardiac or cardio-vascular origin, when the urine contains no albumen, though it is also considerable when a small amount of albumen is present. Lactose is active only in the form of glucose, which is therefore nature's form of the medicament. Lactose is administered in the proportion of 100 grm. to 2 litres of the excipient; glucose in the proportion of 200 grm. of the syrup to 75 or 100 of the excipient; 150 grm. of glucose syrup produces profuse polyuria while 100 grm. is sufficient to produce a well marked effect. The grape cure is applicable to the same class of cases as those in which glucose is given, and it is believed that its diuretic effects are due in great part to the glucose contained in the grapes.

SOZOÏODOL IN RHINOLOGY AND LARYNGOLOGY.—In a thesis on this subject, DR. STERN gives the therapeutical indications for this new product. He is unable to determine the particular element in the sozoïodol to which it owes its action, but he is inclined to believe that its action depends upon the grouping of the component atoms. Sozoïodol possesses the advantage over iodol and iodine of being disengaged in the organism in its organic composition and not in the form of an iodurite. Furthermore, the action of the sozoïdols may be varied in their action by combining them with various metals. The following are the indications given by Stern for the employment of the various preparations of sozoïodol in diseases of the nose and larynx:

1. Sozoïodol of sodium, readily soluble. Indicated in all cases where it is desired to obtain a general antisepsis rather than a local antiseptic action. It is also used in all cases where aqueous solutions are employed.

2. Sozoïodol of potassium, sparingly soluble. It diminishes the secretions and acts as a dessicant—it is therefore indicated in eczema. It is usually employed with talc in the proportion 1–5 or 1–6.

3. Sozoïodol of zinc acts locally as an irritant in solutions of from 1–20 to 1–50, and as a caustic in a solution of 1–5.

4. Sozoïodol of mercury acts locally as a caustic, even in a solution of 1–10. Miller affirms that a solution of 2½ parts in 100 of this solution kills the acarus in 24 minutes.

Good results have been obtained in atrophic nasal catarrh (sozoïodol of zinc 1 part, talc 10 parts), in hypertrophic rhinitis and rhinopharyngitis (sozoïodol of zinc 1 part, talc 12 parts); good effects have also been obtained in tubercular ulceration of the pharynx and larynx, and in syphilis of the nose and larynx (zinc salt 1–12, or mercuric salt 1–20). The sozoïodol should be used in the form of powder unguent, etc. Where use is made of aqueous solutions the sodium salt should be used.—*L'Union Méd.*

HAIR TONIC.—RABOW recommends the following mixture as a stimulant to the scalp.

Spts. saponis	
Aq. coloniensis āā	100.0
Tr. cinchonæ Co.	2.0

—*St. Petersburger Med. Woch.*

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SATURDAY, MAY 24, 1890.

TENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS, SPRINGFIELD, 1890. REPORT ON MEDICAL EDUCATION, MEDICAL COLLEGES, AND THE REGULATION OF THE PRACTICE OF MEDICINE IN THE UNITED STATES, 1890.

The work of this Board has been looked for with much interest, especially as the executive of the Medical Practice Act of this State. It has been the subject of careful study by all interested in higher medical education. In 1879 a paper was presented to the Association at the meeting in Atlanta, in which the condition of the profession in the State at the time the Act went into effect was briefly stated, and the results likely to be realized, indicated. In 1883, at the Cleveland meeting, the work then accomplished was presented to the Section on State Medicine, and became the subject of an interesting discussion. Since the organization of this Board there have been similar enactments in other States, and the public has come to think that something can be done in the way of legislation to increase the efficiency of the profession, and thus secure for it a higher place in the estimation of the people. It must be confessed that the friends of such legislation were not very confident as to the outcome when the Illinois law went into effect in 1877. After thirteen years we think there is reason to feel satisfied with the working of this experimental effort, for such it was in the beginning, to regulate the practice of medicine, or in other words, to require evidence of knowledge and honesty as a condition to the exercise of the profession.

The law has always had a guaranty for its members in the examinations for admission to practice, and its provisions for discipline. The people are beginning to think that the interests of health and life are as important as those of property and liberty.

It is interesting to note the evident effect of this law upon the number and constitution of the profession in the State. It is certain that the population of the State has largely increased, and yet the number of persons engaged in the practice of medicine on the 1st day of January, 1890, is less than on the 1st day of July, 1877. In other words, the ratio of physicians to population has very sensibly diminished.

It also appears that a very great change has taken place in the qualification of the profession. When the law went into effect there were in the State engaged in practice 7,400 persons. Of these 3,600 were graduates from some medical college. While 3,800 were non-graduates. In other words, the graduates constituted only 48 per cent. of all engaged in practice. On the 1st day of January, 1890, the percentage of non-graduates to the whole number was only nine. From 3,800 the number has been reduced to 575.

Whatever may be the value of a diploma as an evidence of knowledge, it is morally certain that in the aggregate graduates in medicine are better qualified, are better educated than non-graduates. The discriminating power of the Board as to what constitutes a reputable medical college gives additional value to a diploma accepted by it, as an evidence of qualification.

For much of the very satisfactory results of the working of the Illinois law the profession is indebted to the Secretary of the Board, DR. JOHN RAUCH.

The report is accompanied with other matters of interest. Especially will it be a source of gratification to those of our medical friends in the State of Illinois, who served in the late war, to find such a just and graceful recognition of the service which they rendered to their country in its time of trial.

The report or history of the medical institutions of the United States and Canada will always be recognized as a work of great value, not only in Illinois, but wherever accurate in-

formation is desired concerning medical institutions and medical education. A hasty examination of it impresses us with the immense amount of work and care involved in its preparation.

It is with pleasure that we note the great degree of uniformity, especially in the Western States, of legislation upon the important subjects pertaining to public health. Should it be found possible to coördinate all these State Boards by National legislation, so as to secure, in case of common danger, uniformity of methods and wise coöperation, a very great advance would be made towards the realization of the ideal health organization.

CORDIAL WELCOME TO THE BERLIN CONGRESS.

VIRCHOW writes an interesting salutatory to the April number of his *Archiv*, which issue marks the beginning of his 120th volume. He takes occasion to welcome the medical fraternity of the whole world to the coming Berlin Congress, which he fondly hopes will lead up to permanent international good-will and concord. He frowns upon any sectional root of bitterness, and promises to do his share towards having the rights of all comers considered. He is not quite sure of a peaceful result, but he points off its eminent desirability, for he says: "Let us show that medicine ennobles men and brings them near to the ideal humanity. Let us strive together, as in war, so in peace, to heal the wounded and cure the sick, no matter to what camp they may belong; for we physicians do not make war; it is our first and fairest task to mitigate its terrors and to replace hate and discord by reconciliation and unity."

That is undoubtedly the way it should be. These are sentiments worthy of the man and of the occasion; but these conventions and congresses have a well known tendency to bring to light every little rift in the lute of medical harmony. It is worthy of notice that there is no lack of cordiality on the part of the European medical journals towards the great Berlin gathering, with the single exception of those of France. The Parisian journals are decidedly mute. Virchow does not refer specifically and plainly to this coolness among his Parisian brethren, but he endeavors to assure them, and all others, that his aims are all for science and naught for topography. It is reported that very few favorable responses from men eminent in the French profession have been received in regard to the reading of papers or participating in discussions. It is to be hoped that the cordiality of Professor Virchow's welcome may tend to thaw the crust of coolness that appears to obstruct the full and free coöperation of the convention-loving Frenchman in the grandest medical congress that has yet been convened.

BROMIDE OF GOLD IN HYSTERIA.

The investigations of BOURNEVILLE, GOUBERT and others respecting the use of the bromide of gold in epilepsy, have been supplemented by experiments with the same substance in other nervous affections. Two Russian physicians, ROZENBACH and MERZHEEVSKI, have employed it in a number of intractable cases of hysteria. *The Lancet*, April 19, summarizes from a recent issue of *The Vrach* their results with comments as to its usefulness in a certain range of cases in which the bromide of potassium had failed. The doses, at the outset, were ¼ of a grain, afterwards increased to ½ and higher. Under its influence, the attacks became milder and shorter, with increasing intervals between them; the only untoward effect reported was a moderate anæsthesia of the mouth. The drug is readily soluble in water, and keeps well if not exposed to a strong light. The drug is not an extravagantly expensive one, as the doses are relatively small as compared with the other bromides; 15 grains cost six shillings, English currency, and that amount will suffice for the ten to fourteen days, during which the experimentation with the drug will have been inaugurated. In regard to epilepsy, the use of steadily increasing doses has been followed by good effects in the hands of DR. DANILLO. He employed it in eight cases, beginning with ⅕ of a grain four times a day, and afterwards increasing the number of doses to twelve and sixteen per diem, but ordinarily 1 grain daily was the dose for an adult in the cases reported by the Russian physicians.

ONTARIO MEDICAL ASSOCIATION.—As the Provincial elections take place on June 5, it has been decided to postpone the meeting of the Ontario Medical Association to the following week. The Association will therefore meet in Toronto, on Wednesday and Thursday, June 11th and 12th.

EDITORIAL NOTES.

TO OUR READERS.—As the reading matter forms of THE JOURNAL are printed off by Wednesday of each week, the management have thought it better not to delay this issue in order to insert an imperfect report of the Nashville meeting, but rather to publish THE JOURNAL of the 31st as early as possible during the coming week, so that by the time the members reach their homes they may receive it with as much of the report as the space at our command will admit of insertion.

IT is expected that the number of medical practitioners taking part in the International Congress at Berlin this autumn will not fall short of 5,000. In view of this large attendance the idea of a general banquet has been abandoned, and each of the eighteen Sections will have its own special dinner at 10 shillings a head. The recently established Berlin Laryngological Society will also entertain the members of the Section of Laryngology.

MEDICAL AID TO THE POOR IN KAZAN.—The Düma (Town Council) of Kazan has just appointed four doctors to render gratuitous medical assistance to the poor of the East Russian town, which numbers about 150,000 inhabitants. They are to receive a salary of 1,000 roubles (about $500) a year, and are forbidden to engage in private practice. An allowance of 2,580 roubles ($1,290) yearly will be made by the Düma for drugs and working expenses.

NON-NAUSEOUS ANTIPYRIN. — To mask the taste of antipyrin, Dr. Ballerny, in the *Lyon Médical*, advises the addition of an infusion of coffee, with milk, to the watery solution of the drug. Another thing that will disguise the taste of this drug is soda-water with a currant or raspberry syrup; this latter will lessen its disturbing action upon the stomach, amounting at times to a prolonged and intractable nausea.

ACCIDENTAL DEATH OF A PHYSICIAN.—Dr. R. H. Cameron, of Johnstown, N. Y., lost his life April 26, while engaged in breaking in a colt at the local driving park. He was prominent as a physician, with special aptitude for ophthalmic work. He was in his forty-fifth year and had been in practice twenty years, having gone to Johnstown very soon after taking his degree at the Medical College at Albany, class of 1870. He was a member of the Fulton County Medical Society, of the State Society and numerous social organizations.

CANADIAN MEDICAL ASSOCIATION.—The meeting of this Association for 1890 will take place at Toronto, September 9, 10 and 11. A Committee of Arrangements has been appointed, with Dr. Canniff as chairman. This Committee has met, and taken into consideration the means by which the meeting in the Queen City may be made most pleasant and profitable to the visiting brethren.

ONE result of Prince Bismarck's retirement will, perhaps, be a notable improvement in the eyesight of his countrymen. German oculists almost unanimously attribute the extraordinary prevalence of presbyopia and other defects of vision in the Fatherland to the use of the national blackletter type in school books. Prince Bismarck has always resolutely stood upon the ancient ways in this matter, and has opposed the substitution of the Roman for the Gothic character in German books. The party of typographical reform is now hopeful of succeeding in its object.

MITCHELL DISTRICT (IND.) MEDICAL SOCIETY.—The annual meeting of this Society will be held at Indian Springs, on the E. & R. R. R., June 12, 13 and 14. The new hotel, with accommodations for four hundred guests, will be opened June 1. Practical contributions are solicited, and titles should be forwarded to Geo. W. Burton, M.D., Chairman Committee of Arrangements, Mitchell, Ind.

CHANGES IN FACULTY.—The following changes have been made in the Faculty of the Medico-Chirurgical College. Dr. J. M. Anders transferred from Diseases of Children to Clinical Medicine; Dr. Ernest Laplace made Professor of Pathology and Clinical Surgery; and Dr. Samuel Wolfe Professor of Physiology.

DAKOTA MEDICAL SOCIETY.—The ninth annual meeting will be held at Sioux Falls, South Dakota, June 12, 13 and 14, 1890. Business sessions of the meeting will be beld in Odd Fellows Hall, and order will be called promptly at 2 P.M. Thursday, June 12. All regular physicians in the State are invited to be present and join the Society. Delegates from either State or local medical societies will be cordially welcomed.

TOPICS OF THE WEEK.

THE PSYCHOLOGICAL ASPECT OF MEDICINE.

Science is verging rapidly and closely to the general acceptance of a somewhat new truth, and one which I believe will even more powerfully affect our conceptions of the etiology of disease than even the discovery of the germ, viz.: that the true seat of disease is more often than we can now understand or even conceive in the centres of the brain. As we discover the functions of its various parts, we see that it is derangement here that produces the trouble yonder, which in our short-sightedness we have been calling peripheral. When we find fever we need not even now always invoke the ever useful "Malaria" as an explanation, but may oftentimes refer it to a derangement of the temperature centre. When we have convulsions we are not driven to "teething" or "derangement of the stomach" for the cause, but may look at once to the conditions of the motor centres. Increased rapidity of the heart's action is probably always due to disturbance in the accelerator centre in the medulla. So the circle widens and will probably include every function. Remembering how closely connected and how intimately related are all parts of the brain, we can appreciate how, acting upon it, a mental impress may produce an effect hurtful or remedial in any part of the body.

The complexities of the machine are marvellous and infinite.

Poetic conceptions of the human soul are giving way to physical. Need the beauty lessen? The beauty of the maiden or the rose is physical. The marvel of the human brain is as great as the marvel of the human soul. Are we not dimly conscious that the human soul is a condition of the human brain? Does not this conception bring us nearer to our fellow? Can we not better lend a hand? He who has a true and helpful conception of life has first studied deeply the workings of his own soul. Who that has writhed Laocoon-like in the folds of human passion? Who that has soared poet-like into realms of peace, and while thus writhing or soaring has taken note of himself—of his inner consciousness—has not realized how much of the physical there is in it after all. The turgid brain in passion, the tranquil brain in peace. Indeed, the terms are almost convertible. Passion is turgidity of brain; peace is tranquility of its circulation. How this view broadens the work of the physician in the field of mind! He is no true physician who has not insight. He truly, that hath it not, heals only the wounds of the body. To be a true physician one must be able to play at least a few measures upon the strings of the soul.

Faith-healing has come and gone, but left a deeper sense of the great truth, dimly conceived by the scientific mind before, that what we term mental influences may be used to produce marvelous physical results. Do you doubt the physical effect of an idea—a thought—a conception? Then brood and brood over some conception almost comparative in its character. Note the sense of fullness, perhaps of pain, that fills the brain. Then let something happen that dissipates the idea or shows the conception erroneous and note that sense of suffering—how quickly it has passed away. In an instant the tension and irritability have vanished. Tranquility of brain and mind reappears, and life moves on in happier circles.

The physician but too often regards himself but the "healer of wounds of the body." This conception is too narrow to befit either himself or his opportunities. There is a broader sense in which he may be the benefactor of his race—as an educator. His it is, if he will, first to teach the world the value of that great function inhibition—control. To show to the world that great physical fact, the relation of the centres and the incalculable value of proper order and subordination in them in the making of character. Nature, ever wise and thoughtful, in placing the organic functions in the medulla—the sensory and emotional next above and the motor and intellectual highest in the brain—has hinted to us their order. That these be masters; these servants.

I once had a curious case, the management of which was for a time beyond me. I tried medicines; influences, mental, moral, physical. Still I failed. Finally I wrote a letter in which I carefully elaborated this idea that the brain is a household of centres; some of which were servants, some masters; and pointed out the fact that in her case the servants had become masters. She recovered promptly. I flattered my medicines. Long after she said: "Doctor, it was your letter that cured me." I believed her. But I will not concede that the letter was not in the highest and best sense a medicine.

The advance in knowledge and its permeation has been so wide and deep that even the comparatively ignorant are dimly conscious that wounds of the soul are in some sense physical. Does any one to-day ask despairingly, "Who can minister to a mind diseased?" On the contrary he betakes himself to his physician, if so be that physician is a man of sympathetic insight, and opens to him his life and says, "What shall I do to save me from myself?" From the "*I*" that is consuming me?

Balzac, writing when science existed only as an infant and superstition reigned, said: "There are three great healing professions—the priest, the lawyer, the doctor. The first, stanches the wounds of the soul; the second, the wounds of the purse, and the third, the wounds of the body." How narrow this conception to-day? The pastor as a confessor has well nigh passed away. The physician has taken his place because he has been found helpful in a larger way. It has been said that one who has ever successfully practiced medicine can never afterwards content himself with any other calling. What wonder? *Is* there any other in which the contact of mind with mind is so close, or where the impact of soul upon soul is so powerful? The man of business, the lawyer, or pastor, sees but the merest surface. Uncharitableness in relation to human kind and conduct is thus to be accounted for. The physician may become a sort of recluse—he may, and probably does, permit himself to become petty and narrow in many things, especially toward his brother *medicus*—but he ever remains magnanimous in relation to human kind and conduct.

He, the earthly searcher of hearts, finds therein much of good along with the degradation and inevitable debris of life, and he learns to estimate his fellow rather by the good than by the evil he finds.

To the Greek mind, which was above all acute in its poetic conceptions and intellectual discriminations, the term Psuche or Psyche meant either soul, butterfly, or breath, thus typifying in one word the mystery, the beauty, the evanescence of mind.

In this our age, practical—unpoetic—seeking knowledge of tangible things, much of the sentiment pertaining to the human soul has passed away, yet it remains, as to the Greeks, the most mysterious, the most beautiful, the most evanescent of all created things; showing at once how real, how truthful, how lasting are poetic conceptions.—Clark Gapen in *Omaha Clinic.*

SEPTIC PERITONITIS.

Many fevers now distinguished from each other were once held to be one and the same disease. The process of pathological specialization has made such advances, on the strength of sound scientific evidence, that even the term "septic peritonitis" is now held to confound two or more distinct diseases under the same name. Learned papers on the subject are hard for any reader not an expert to follow, and experienced operators are seldom eager to acknowledge pathology and bacteriology as their chief guides. Prof. Bumm, of Würzburg, has, however, lately brought out an intelligible communication "On the Etiology of Septic Peritonitis." It will be found in the January number of the *Annales de Gynécologie.* Dr. Bumm's valuable researches into the nature of the specific germs of tubercle and other diseases are well known. He distinguished three forms of inflammation of the peritoneum: Aseptic, septic, and specific peritonitis. The first form is developed through the agency of mechanical or chemical irritation. It generally ends in fibrinous exudation, and adhesions between different abdominal structures are thus established. The septic form of peritonitis includes two distinct varieties, one due to the streptococcus, the other simply putrid. Streptococcus peritonitis appears to be a very definite malady. It is almost invariably the result of puerperal infection. The germs reach the peritoneum, from their origin in the genital canal, either through the Fallopian tubes, or through the uterine walls and surrounding lymphatics. The fluid in the peritoneum when death occurs very soon after infection is clear and free from odor, but loaded with streptococci and intensely virulent. A minim, or less, injected into the peritoneum of a rabbit will rapidly set up deadly peritonitis. The physical symptoms are little marked; the intestines are greatly distended, but their serous coat remains white and smooth, and patches of lymph are few and pale in color. When death occurs after the disease has lasted for two or three days, the fluid in the peritoneum becomes puriform and far less deadly to other organisms. The familiar morbid appearances are plainly marked.

Streptococci which are cultivated apart from the fluid developed in peritonitis are also not very deadly. No doubt, men who do not believe in germs will on that account contend that it is something which comes with the germs that causes such disastrous results. The germs do the least harm when introduced without any fluid, or when they have dwelt for some hours or days in peritoneal fluid. According to strict scientific evidence, however, it appears that the greatest harm arises from the combination of streptococci with exudation thrown out in the earliest stages of peritonitis. The streptococcus disease, as we may term it, may attack patients on whom abdominal operations have been performed, through infection which is probably always derived from a puerperal case. As a rule, however, the disease which follows abdominal sections or perforation of the alimentary canal is "putrid peritonitis." In this variety the exuded fluid is from the first fetid and turbid. It contains, not one specific germ, but a mixture of germs. It does not set up peritonitis if injected into the peritoneal cavity of rabbits in small quantities. In cases of putrid peritonitis the mixed germs lie in a favorable medium and multiply with rapidity. They then are able to set up a widespread decomposition of the fluid in the peritoneum. Hence the disease progresses slowly, going from bad to worse, whilst the streptococcus variety begins with symptoms of extreme virulence.

Of specific forms of peritonitis, the tuberculous is the most distinct. According to Dr. Bumm the existence of a gonorrhœal peritonitis is doubtful. Gonorrhœal pus poured out of a ruptured tube into the peritoneum seems to act as an aseptic fluid provided it be pure, and becomes encysted. When mixed with pyogenic germs the case is different, and septic peritonitis may follow.—Editorial, *Brit. Med. Journal.*

DOCTORS AND WINE.

Nothing indicates more plainly the healthful advances in regard to diet than the changes that have occurred in physicians themselves. Two hundred years ago, and even much later, doctors were notorious for their eating and tippling, and were generally very fat. Dr. Beddoes was so stout that the ladies called him their walking feather bed, and Dr. Fleming weighed 291 pounds until he reduced his weight by abstinence and eating a quarter of an ounce of Castile soap every night, and Dr. Cheyne weighed 384 pounds. It is said that it was during the seventeenth century, when doctors drank so heavily, that it became fashionable for them to write such illegible prescriptions, which were the result of their trembling hands. The man who remains abstemious where no liquor is to be had, does not deserve much credit, but the man who is temperate when the sparkling champagne stands beside his plate merits our approbation.

THE LAW CONCERNING HYPNOTISM IN SWEDEN.

The question whether a hypnotized person who acts at the suggestion of others is responsible for his actions is considered in Sweden to depend upon the fact whether he knew of the danger to which he exposed himself in being hypnotized, and submitted to it voluntarily. If so, by the law of that country, he is held responsible, otherwise not.

SOCIETY PROCEEDINGS.

The Illinois State Medical Society.

Fortieth Annual Meeting held in Chicago, Illinois, May 6, 7, and 8, 1890.

(*Concluded from page 733.*)

SECOND DAY—MORNING SESSION.

DR. C. W. EARLE, Chairman of the Committee of Arrangements, announced that immediately after adjournment at noon, the Society would repair to Kinsley's, where a lunch would be tendered to visiting members by the Faculty of the Post-Graduate School of Chicago.

THE REPORT OF THE COMMITTEE ON SURGERY

was then read by its Chairman, DR. F. C. SCHAEFER, of Chicago.

In scouring the field of surgery, said Dr. Schaefer, we are compelled to admit that antiseptic surgery is an established fact. Very few surgeons at the present time have the hardihood to treat wounds without some pretensions to antisepsis. *Sterilized lint.* M. Regnier recommends lint sterilized at the temperature of 248° F. for surgical dressings, having himself used it in many operations of various kinds with as good results as with antiseptic dressings. A surgical dressing may be antiseptic, and yet not germicidal. It is then inhibitory in its action, it prevents the germs from passing through it into the wound, and such qualities Lister claims to have found in the double cyanide of mercury and zinc, and by means of experimentation he has succeeded in preparing a gauze charged with the double salt. He says the double cyanide requires about 3,000 parts of blood to dissolve it. If, therefore, it is present in a gauze in the proportion of about 3 per cent., you will easily understand that blood serum may soak through such a gauze time after time without washing the ingredient all out; so that it is a material which is admirably stored up in the dressing. That is one of its three great advantages, the others being that while trustworthy as an antiseptic it is completely unirritating, and under this we find that not only do wounds, the edges of which are brought accurately together, unite beautifully by first intention, but even granulating sores heal by the gradual process of cicatrization from the edges—heal by scabbing in a way that we have never seen under any other dressing.

The Surgical Treatment of Typhlitis.—The operation should not be performed until all inflammatory and other symptoms have quite subsided. The incision should be made obliquely from above downward and inward over the cæcal region, its lower extremity ending just external to the epigastric artery. The incision should not be made directly over the appendix or over the dullest region. If it be so placed a number of adhesions will probably be encountered, and the demonstration of the peritoneal cavity might be difficult. The cæcum or the appendix might be actually adherent to the anterior abdominal wall. The incising of the peritoneum should, therefore, be conducted with the very greatest care. It is well that the parietal cut should open the abdomen at a point just beyond the diseased area, and where no adhesions exist. When the appendix and cæcum are exposed, the area of the operation should be cut off from the general abdominal cavity by sponges. If this plugging with sponges be well carried out, no blood should enter the peritoneal space. All adhesions should be divided by cutting; none should be "broken down." The latter measure is apt to tear the bowel, or, at least, to bare it of peritoneum. The appendix should be lightly clamped close to the cæcum, and should be divided about ½ inch from that intestine; it should not be secured by a simple ligature. The mucous membrane should be united by many fine sutures, or by a continuous suture; then the divided outer walls of the process should be brought together by a second row of sutures—it is practically impossible to bring the serous coats together. To still further secure the orifice, the stump of the appendix might be lightly attached to any adjacent surface of the peritoneum. The abdominal wound should be closed; no drain is required. (Treves.)

Perityphlitis vermicularis always belongs to the province of surgery, and the following two points are proven: 1. That perityphlitis is always accompanied with a pus cavity. 2. That with the present plan of treatment the patient is more liable to a recurrence of the disease. (Murphy and Lee.)

Other subjects upon which Dr. Schaefer commented at length were: herniotomy, bone surgery, gastrostomy, gastroenterostomy, etc.

DR. J. A. FREEMAN, of Millington, read a paper on *Harrison's Operation for Enlargement of the Prostate Gland*, which was followed by a contribution by DR. GEO. N. KREIDER, of Springfield, entitled

SURGICAL AND MECHANICAL THERAPEUTICS IN DISEASES USUALLY TREATED BY MEDICINES ALONE.

He presented the following conclusions.

1. That mechanical and surgical measures are the most certain in our armamentarium and are only now assuming their proper position.

2. That when called to see a case of disease the first aim of the practitioner should be to determine by proper examination and research whether some mechanical or surgical appliance cannot be used in conjunction with or in place of medical treatment.

3. That the "do something" which this ac-

tion implies will be more uniform in its results, more successful in its curative effects, and more pleasing to the patient than the "think something" treatment which tries every medicine by turns and nothing long, and hopes for beneficial results.

4. That the ability to use exact appliances for the examination of patients and treatment of disease should be possessed by every one attempting practice, and that this ability is only to be obtained by preliminary training and clinical instruction.

5. That treatment of disease in this manner has a tendency to elevate the profession in the eyes of the public, and to dissipate nonsensical sects which divide the profession and waste its energies.

MALIGNANT DISEASES OF THE RECTUM.

The general discussion on this subject was opened by DR. D. W. GRAHAM, of Chicago, who made some remarks on *clinical diagnosis*. Dr. Graham said we have a certain group of symptoms common to almost all organic diseases of the rectum. These consist of interference with the function of the bowel, more or less diarrhœa, watery in character, more or less blood and mucoid discharges mixed with fæcal matter, this condition alternating with constipation. Pain is present; there is a general disturbance of health, as well as a disturbed mental condition peculiar to this region. Along with these symptoms we may have tubercular or the ordinary dysenteric ulceration of the rectum, with cicatricial contraction resulting. We may have the results of true syphilis present, the ordinary gummy deposit and the so-called syphilitic inflammation of the rectum, which causes the deposit and ulceration and thickening. The age of the patient is an important aid to diagnosis. The disease usually develops during or after middle life. A few cases, however, are on record where the disease developed in people of 20 years of age.

Palliative Treatment, by DR. E. P. COOK, of Mendota. The indications for palliative treatment of malignant diseases of the rectum were to maintain the permeability of that portion of the intestinal canal and the solubility of the fæces, to prevent the accumulation of fæces above the diseased parts, to secure a free passage of fæcal matter and gases from the gut, to retard and arrest development of the disease, and to relieve pain.

DR. C. TRUESDALE, of Rock Island, spoke on palliative operations and their relative merits. He said a constant result of malignant disease of the rectum are more or less stricture and resulting obstruction to the passage of fæces. The first palliative operation resorted to is usually urethral or rectal bougies, for the purpose of dilating any stricture or strictures which may exist. When the conclusion is reached, however, that an operation for a radical cure is inadmissible, the less we meddle with the rectum the better. The only thing worthy of trial, in his opinion, is an occasional irrigation with some warm antiseptic solution, such as warm carbolized water, the latter acting not only as an antiseptic, but also as a sedative.

DR. JOHN E. OWENS, of Chicago, dwelt upon the radical operations and their relative merits. The operative treatment for cancer of the rectum may be briefly considered under two heads, viz: Firstly, colostomy, or the establishment of an artificial anus, or some modification of the operation for diverting the fæces from their passage through the rectum, and thus dispensing with this portion of the bowel as an active organ; secondly, proctectomy, ablation, or excision of the rectum. Proctectomy is confined to the lower portion of the bowels. If not attended by an undue mortality, or followed by great disadvantages, it should take its stand as an established procedure. During the last two or three years Dr. Owens has advised all patients who have been operated upon for cancer to report to him every thirty days. In this way recurrence of the disease can be dealt with promptly.

SENILE PROSTATIC ENLARGEMENTS.

The discussion on this subject was opened by DR. EDMUND ANDREWS, of Chicago, who illustrated his remarks. Dr. Andrews was followed by Dr. A. E. HOADLEY, of Chicago, who discussed in an able manner the indications for supra-pubic and perineal method of approaching the prostate for operation.

What are the Recognized Methods for Removing Prostatic Obstructions? was the subject of Dr. C. Chenoweth, of Decatur.

DR. A. B. STRONG, of Chicago, read an interesting paper on *The Results of Operations for the Removal of Prostatic Obstruction.*

AFTERNOON SESSION.

Renal Calculus.—The diagnosis was discussed at length by Dr. I. N. Danforth, of Chicago; the operation by Dr. J. Frank, of Chicago.

Perityphlitis.—Diagnosis was discussed by Dr. E. W. Lee, of Chicago; *operative treatment* by Dr. Frank Andrews, of Chicago; *when to operate*, by Dr. J. B. Murphy, of Chicago. Dr. Murphy said Deahna operated on seven cases in which there was neither fluctuation nor phlegmon in the abdominal wall, and in only one case did he fail to find pus. He was satisfied that there was almost entire absence of induration in this case, and could not be certain that pus was not present before making an operation. He operated from the ninth to the twenty-first day from the onset of the attack. In one case he failed to come directly on the abscess, but the pus emptied itself through

the wound on the second day afterward. Usually at the end of the fourth day symptoms of general peritonitis subside, and there can be felt a slight induration in the right iliac region; then is the time to operate. Dr. Murphy called attention to cases where there is only a small induration in the ileo-cæcal region, with the accompanying symptoms of perityphlitis, before there is the slightest evidence of fluctuation or phlegmon in the abdominal wall. It is difficult to give the exact indications for the proper time to operate when the symptoms are slight, for both the patient and the surgeon are reluctant to resort to operative interference. As yet the number of cases operated on have been too small to lay down any definite rule, notwithstanding it is Dr. Murphy's conviction that before many years every case of perityphlitis, when diagnosed, will be immediately opened, the appendix ligated, if possible, and amputated. This operation gives the only guarantee that the patient can have of safety from the impending danger of the disease and security against its return. It must be remembered that in making the examination the greatest caution should be exercised in palpation and percussion, as he knew from experience in making autopsies that slight pressure can rupture the adhesions and the whole contents of the pus cavity escape into the peritoneum.

Treatment of Wounds.—This subject was opened by a brief paper read by Dr. D. A. K. Steele, of Chicago, on the relative value of the different suture materials. He said that in selecting a suture material we are guided by the light of modern surgical pathology to select a material that is surgically clean, a substance that, by suitable preparation and preservation, has been rendered aseptic, *i. e.*, incapable of containing within itself microörganisms that would carry infection from *without* into the tissues of the body. By a rigid adherence to this rule we are enabled to emulate Marcy and close an aseptic wound by an aseptic suture aseptically applied.

The best method for preservation of the different suture materials until required for use, was discussed by Dr. E. W. Andrews, of Chicago.

What is the best method of to-day for preventing infection of operative wounds? was the subject of Dr. L. L. McArthur, of Chicago. As patient, operator, instruments, sutures, and dressings may, any one of them, be a source of infection, Dr. McArthur devoted his attention to each. He ventured the statement that one-half of the primary wounds under the present methods are dressed aseptically at the time of operation, and then only become infected at the re-dressing. Operators under excitement are inclined to drop into careless habits and proceed somewhat after the following fashion: They call for a questionable basin, and dropping into it an indefinite amount of carbolic acid, proceed to remove the dressings without any such formalities as we were satisfied were essential at first. Here is where the fallacy lies to-day. Too great carelessness at the redressing, permits infection, and encourages the sceptical in the belief that there is nothing in the principles of aseptic surgery. Before the old dressing is removed a stream of 1-1,000 should be ready and playing on the inner layer of gauze as it is being removed and during the time of exposure of the wound. Having rendered the parts clean, they can best be kept so by providing in addition to the regular dressing, a heavy dressing of absorbent cotton, not with the idea of catching discharge, but with the object of filtering the atmosphere which is to gain access to the wound through the dressings.

On motion the Society adjourned and immediately repaired to Kinsley's, where a lunch was tendered by Dr. C. T. Parkes, of Chicago.

THIRD DAY—MORNING SESSION.

DR. S. S. BISHOP, of Chicago, read a paper on *Menthol in Diseases of the Air Passages.* He had used it considerably in a variety of diseases, and believes its remedial properties entitle it to an important place in the work of general practitioners and specialists alike. A 5 or 10 per cent. solution is as strong as patients generally will bear without discomfort.

DR. E. F. INGALS, of Chicago, read a paper on *Stricture of the Œsophagus*, which he says is met with more frequently in men than in women, and usually occurs in early life. It is not infrequent among children, and a few congenital cases have been observed. Strictures resulting from swallowing hot or acrid fluids are usually found at the upper part of the tube just back of the cricoid cartilage. Next in frequency is the lower portion of the tube near the cardiac orifice of the stomach. The stricture may be single or multiple. He reported thirteen cases.

DR. JOHN E. RHODES, of Chicago, read a paper on *Anosmia.* He said no treatment has been suggested that will relieve a case of *true* anosmia. If dependent upon local conditions, as deformity of nasal structure, excessive hypertrophy, or nasal polypi, surgical measures may result in complete or at least partial relief.

REPORT OF THE COMMITTEE ON OBSTETRICS.

This report was presented by the Chairman, Dr. J. S. Miller, of Peoria, which was a résumé of recent progress. It was followed by papers on *The Logic of Progressive Midwifery*, by B. H. Harris, of Groveland, and the *Parturient State*, by Lucinda H. Corr, of Carlinville.

DR. W. E. CASSELBERRY, of Chicago, read a paper on *Adenoid Hypertrophy in the Naso-Pharynx.* He said in multiplicity of cases, gravity of consequences, facility of operative treatment, and brilliancy of results, the disease which

is invariably known as adenoid hypertrophy in the naso-pharynx, may be said to outrank any other affection of the upper respiratory tract. For pronounced hypertrophy the only satisfactory method of treatment is removal by surgical means.

THE REPORT OF THE COMMITTEE ON GYNECOLOGY

was next called for, and was presented by the Chairman, Dr. L. A. Malone, of Jacksonville. Dr. Malone gave a résumé of the work done in gynecology as offered through the medium of medical journals, societies, monographs, etc.

Dysmenorrhœa.—Most happy results have been gained by the use of the steel dilator in this affection, dilating the cervix from three-fourths to one and one-fourth inches, antiseptic precautions having been taken. Goodell has employed this treatment in 322 cases without any serious mishaps, and with almost invariable and permanent relief.

Tubes and Ovaries.—Abdominal surgery has been in the past few years a fertile field for operation. The sacred precincts of the peritoneal cavity, which but a few years ago, none but the boldest dared to enter, has now become the fit arena for even novices to operate. Since Lawson Tait electrified the world by his wonderful successes, emulators have become numerous everywhere. There is scarcely a hamlet in the United States to-day where may not be found at least one who has opened a woman's belly and erected a tombstone to the memory of his daring. All sorts of mental disturbances and neuralgias have been made a pretext for the operation. Dr. Malone had seen normal ovaries offered as a justification for their removal, the patient being a hystero-epileptic.

Dr. Eliza H. Root, of Chicago, read a paper on

CONSTIPATION AND ITS RELATION TO PELVIC DISEASE IN YOUNG WOMEN.

Constipation, long continued, gives rise to a train of symptoms that present themselves for relief in the daily practice of every active physician; nor does he find any one cause of ill health so difficult to remove. It is an active factor in the production of pelvic disease in women; for, where endocervicitis and even retroversion exist, rapid improvement is made as soon as constipation is relieved. The causes of constipation are varied and arise in childhood from faulty diet, dress, and neglect of elimination. It occurs at the time of puberty when the transition from girl to womanhood gives rise to faulty nutrition and consequent relaxation of all the body tissues. Pelvic disease results from constipation through pressure. The filled and distended sigmoid flexure and rectum press upon blood vessels, nerves and muscles, exerting direct and reflex influences upon the functional activity of the whole economy. Dr. Root reported three interesting cases.

AFTERNOON SESSION.

Dr. Mary H. Thompson, of Chicago, read a paper entitled, *A Few Interesting Cases in Gynecology*, which was followed by a contribution on *The Prevention of Puerperal Mastitis*, by Dr. Ellen M. Heise, of Canton.

Dr. F. H. Martin, of Chicago, read a paper on

HYSTERECTOMY IN MALIGNANT DISEASES OF THE UTERUS.

The operator reported five successful cases operated upon during the last year. His conclusions were: 1. Seek to make an early diagnosis of this dread disease. 2. When the diagnosis is made operate early, selecting vaginal hysterectomy as the operation calculated to give the best results. 3. The legitimate future immediate mortality of this operation in the hands of experts will be as low as high amputation. 4. The ultimate curative results with vaginal hysterectomy must of necessity be the best that it is possible to obtain by operative procedure. 5. Vaginal hysterectomy is indicated in *all* cases of cancer of the uterus, where it seems possible to get beyond the diseased tissue. 6. Choose the open operation; ligate the base of the broad ligament with strong silk and secure its upper two-thirds with lock forceps.

Dr. D. A. K. Steele at this juncture exhibited a patient upon whom he had operated for osteosarcoma of the right scapula.

THE REPORT OF THE COMMITTEE ON DRUGS AND MEDICINES

was read by Dr. John A. Robison, of Chicago. Dr. Robison took for his subject the Treatment of Phthisis Pulmonalis. He said that the therapeusis in each case must be planned according to the patient, his social relations, his environments, his wealth, and the judgment of the physician. He presented for consideration the hygienic, climatic, medicinal, dietetic, and surgical treatment of the affection. Under the head of hygienic treatment he tabulated the following means: Respiration exercises, or deep breathing; breathing pure air; gymnastic exercises; sufficient rest and sleep; daily baths; dressing properly. With regard to the climatic treatment, he said that the practice of sending patients away indiscriminately is deplorable, as each case must be carefully studied, and the resort chosen according to the individual temperament, stage of the disease, wealth, and social habits of the patient. A mountain climate is advisable in all cases when there is threatened phthisis with a strong hereditary predisposition, or when there is poor thoracic development. The warm and moist climates, such as the sea-coast or sea voyages, are most suitable for phthisical patients of an excitable and nervous type, or those suffering from insomnia or bronchitis. The warm and dry climates are best suited to sufferers from

phthisis who have heart disease or albuminuria. Surgically there was every reason to believe that drainage antiseptically of lung cavities will be successfully done in the future. Denison, of Denver, reports several cases in which drainage promoted cures.

Other papers which were read are as follows: *Opium in Disease*, by Dr. C. E. Davis, of El Paso; *Catalpa Speciosa*, by Dr. J. Schneck, of Mt. Carmel; *Relation of Eye Strain to Headache and other Nervous Affections*, by Dr. F. C. Hotz, of Chicago; *Empyema of Antrum of Highmore*, by Dr. R. Brown, of Chicago; *Treatment of Posterior Turbinated Hypertrophy*, by Dr. A. E. Prince, of Jacksonville; *Correction of Slighter Forms of Astigmatism*, by Dr. Gardner, of Chicago; *Relation of Nasal Diseases to General Disturbances of Health*, by Dr. H. Gradle, of Chicago; *Diseases of Children—Diphtheria, Intestinal Obstruction*, by Dr. R. J. Mitchell, of Girard; *A Rational Method of Treating Rotary Lateral Curvatures of the Spine*, by Dr. Charles F. Stillman, of Chicago.

OFFICERS FOR 1891.

President, Dr. J. P. Mathews, of Carlinville; *First Vice-President*, Dr. C. C. Hunt, of Dixon; *Second Vice-President*, Dr. F. C. Schaefer, of Chicago; *Permanent Secretary*, Dr. D. W. Graham, of Chicago; *Treasurer*, Dr. T. M. McIlvaine, of Peoria; *Assistant Secretary*, Dr. Geo. N. Kreider, of Springfield.

On motion the Society adjourned to meet in Springfield, third Tuesday in May, 1891.

DOMESTIC CORRESPONDENCE.

The Conference of Medical College Delegates.

To the Editor:—The recent communication of Dr. Davis seems to indicate his belief that there is a possibility, perhaps a probability, of very little good arising from the conference of Medical College Faculties to be held in Nashville. I, at any rate, greatly fear that the attempt will not soon give us a graded compulsory course of three years in all colleges.

The truth is this: The only way to have a high standard of education in all medical colleges, is for each medical school to raise its own standard without waiting for other schools to do likewise. Corporate morality is subject to the same laws and rules of growth as personal morality. So soon as a merchant becomes convinced that to put a 1 lb. label on ⅞ of a lb. of tea is wrong, so soon as he believes that to sell a mixture of terra-alba and sugar for pure sugar is immoral, so soon must he cease to thus wrong the public. His evil doing begins at once when he *knows* he is doing an immoral thing; he cannot wait until all other merchants agree in solemn convention that they will refrain from such fraudulent practices. The same rule applies to medical schools. Just as soon as the college officers believe that a two years' course is a degradation to the school, and a fraudulent and inefficient method of educating physicians, they are forced by the moral law to the immediate adoption of a better method.

The attempt to postpone the right action until all do likewise is unphilosophical, immoral and a stultification of conscience. Let each Faculty, which believes in a three years' course, raise the standard to that which is now adopted by all first-class institutions, and let every man who believes in justice to the public, and the necessity for a three years' curriculum, refuse to hold position as Professor, Lecturer, or Demonstrator in any two year school. The question will thus be at once solved. The slaughter of the innocents arising from the manufacture and sale of short weight physicians will only be stopped by such decided action on the part of persons and of institutions.

We have heard for years resolutions enough; let us now have conscientious action on the part of men and schools. Respectfully,

JOHN B. ROBERTS.

Philadelphia, May 12, 1890.

The International Medico-Legal Congress of 1892.

We have received the following communications from Clark Bell, Esq., of New York, with a request that we publish them:

Office of the President of the Medico-Legal Society of New York,
No. 57, Broadway, N. Y., March 31, 1890.

Hon. James G. Blaine, Secretary of State, Washington, D.C.

Dear Sir: I have the honor to enclose a circular we are sending in the English, French, German and Spanish languages, to the various countries of the world, asking coöperation with the International Medico-Legal Congress, which will be held in 1892 in this country.

Its first session was held in June, 1889, of which I send the preliminary transactions and roll of delegates.

The French circular enclosed shows the officers at this moment, and as Vice-Presidents for the various countries are announced, they will be added to those already appointed. Inspection of the names of the eminent men, who have already lent their names to this project, emboldens me to request the countenance of the American Government, to this movement in aid of this science.

Among foreign peoples, the knowledge of the approval of the Home Government, is of vast consequence to the success of scientific endeavor.

The aid, lent by the French Government, to the Scientific Congresses in Paris last year, gave an

enormous impetus and importance, to that wonderful success, which added new lustre to the glory of France.

We do not desire any pecuniary assistance, from the Government of the United States.

The letters you so kindly sent me last summer were of enormous value to me, in interesting eminent men of science, in the countries of Europe in the movement.

Such a letter of sympathy, with the objects and purposes of our present endeavor, as you can give, will I think be of great value, and will in many countries, especially the Spanish speaking countries on this continent, be of commanding importance.

I am, sir, with high personal regard,

Very faithfully yours, CLARK BELL.

Department of State, Washington,
April 17, 1890.

Clark Bell, Esq., President of the Medico-Legal Society, No. 57, Broadway, New York City.

Dear Sir: I have received your letter of the 31st ultimo, enclosing copies of circulars which you are sending to the various countries of the world, inviting coöperation for the Congress, which will be convened in 1892 in the United States, for the discussion of medical jurisprudence.

The importance of such a gathering as you propose cannot, it would seem, be overestimated. The intelligent discussion of scientific questions, especially those which so closely affect the human family, by a body of gentlemen learned in medico-legal science, must prove of especial value, and should be worthy of every effort, which has for its mission the amelioration of the condition of mankind. My individual sympathy in the objects and purposes of your conference is very great, and I trust that the results of such a meeting as you propose, may correspond, to the aims you have in view, as I have no doubt they will. I am, dear sir, very truly yours,

JAMES G. BLAINE.

INTERNATIONAL CONGRESS.

Tenth International Medical Congress.

By direction of Count Arco, the German Ambassador in Washington, the Consul General of the German Empire in New York, Mr. A. Feigel, sends the following, with the request that the medical and secular press of the country give it the greatest possible publicity. It will be noticed that this circular contains a great many particulars not contained in those previously printed.

CONDITIONS AND RULES REFERRING TO THE INTERNATIONAL MEDICAL AND SCIENTIFIC EXHIBITION IN BERLIN, AUGUST, 1890.

1. The Exhibition will be opened 11 A.M., August 2, 1890, and closed, probably, August 11, P.M., in the Landesausstelungs Park; the Sections of the International Medical Congress will meet in the same place.

Provisions will be made for dark chambers, rooms for experimental purposes, and appropriate demonstrations by experts.

The Exhibition is limited to the following objects: New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of those for photography and spectral analysis applicable to medicine. New pharmacological, chemical and pharmaceutical materials and preparations. New foods. New or improved instruments for operations in medicine, surgery, special branches, electrotherapy, etc. New plans and models of hospitals, convalescent homes and establishments for disinfection and bathing, arrangements for nursing and transport. New hygienic apparatuses. New tables and charts of a statistical nature. Preparations and models. Teaching apparatuses. Medical literature.

Applications are expected before May 15, 1890,[1] and will be received by the Secretary General of the Congress, Dr. Lassar, Berlin N.W. Karlstrasse 19. They must be marked "Ausstellungsangelenheit" and accompanied with a printed visiting or business card containing name and address.

2. Of each application there ought to be two copies. It is requested that it should contain a brief and accurate description fit to be used in the compilation of the catalogue.

3. The decision as to the admission of all or part of the proposed exhibits rests with the special or general boards of organization; they will send an immediate reply.

4. The cost of every square metre or part of a square metre of floor or table surface is 10 marks, of wall surface 6 marks. Two (2) metres in height of the wall are free for those adjoining the wall. Exhibits in the interior of the hall pay for one-half of the size of the walk immediately surrounding, in addition to the space occupied.

5. Tables will be furnished. Cases, shelves, repositories must be procured by the exhibitors under the supervision of the Committee. Electric light, steam power, etc., can be had by special arrangement.

6. Inflammable objects are excluded. Insurance of those admitted will be secured free of cost, if notice of their value have been given.

7. Packing and unpacking is free of expense to foreigners. Great care will be taken, but no responsibility. Expressage by Messrs. Jacob und Valentin, Berlin O. Holzmarktstrasse 65.

8. The exhibits must be delivered on or before July 20. Foreign goods will be free of duty, but certificates—to accompany the goods—ought to be obtained from the exhibition office, Karlstrasse 19.

[1] Count Arco has made such arrangements that applications coming from the United States will be received until the first of July.

FORM OF APPLICATION.

The undersigned, being acquainted with the conditions and rules referring to the International Medical and Scientific Exhibition in Berlin, August, 1890, requests admission for the following exhibits:

Space wanted: { Floor surface, length . . . breadth . . .
Wall surface, breadth. . . height . . .

Exhibition will take place

(a) In own case: Adjoining the wall?
Inside?
(If the latter, add a diagram.)

(b) On tables to be furnished by the committee:
In flat cases?
Exposed without them?
On shelves?
The wall surface above the table is required to the height?

(c) On the floor, without case, etc.

(d) As drawings, diagrams, or in narrow cases attached to adjoining walls?

Value for insurance purposes . . . . . .
Special requests . . . . . .
Brief notes for catalogue . . . . . .
1890. . . . . *Name, etc.*

The German Minister, Count Arco-Valley, has requested Dr. William Pepper, of Philadelphia, to announce to the medical press that he has written to Berlin to have the time for the reception of entries for the International Medical Exposition, in connection with the Medical Congress, extended so that those coming from the United States may be received after May 15.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 10, 1890, to May 16, 1890.

By direction of the Secretary of War, the following named officers are detailed as delegates to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Nashville, Tenn., May 20, 1890: Col. Jedediah H. Baxter, Chief Medical Purveyor; Major Alfred A. Woodhull, Surgeon. The officers named will proceed to Nashville at such time as will enable them to reach there on or before May 20. Par. 4, S. O. 107, A. G. O., Washington, D. C., May 7, 1890.

Col. Edward P. Vollum, Surgeon and Acting Asst. Medical Purveyor, is granted leave of absence for two months, with permission to go beyond the sea, by direction of the Secretary of War. Par. 10, S. O. 109, A. G. O., Washington, D. C., May 9, 1890.

By direction of the Secretary of War, Capt. Henry Johnson, Medical Storekeeper, now on duty at the Medical Purveying Depot, New York City, will take charge of that Depot, and perform the duties of Col. Edward P. Vollum, Surgeon and Acting Asst. Medical Purveyor, during the absence of the latter. Par. 11, S. O. 109, A. G. O., Washington, D. C., May 9, 1890.

By direction of the Secretary of War, Capt. Charles B. Ewing, Asst. Surgeon, is relieved from duty at Washington Bks., D. C., and will report in person to the commanding General, Dept. of the Missouri, St. Louis, Mo., for duty as attending surgeon at those headquarters. Par. 8, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

Capt. Andrew V. Cherbonnier, Medical Storekeeper, is granted leave of absence from June 1, to include October 1, 1890, by direction of the Secretary of War. Par. 4, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

Lieut.-Col. Charles C. Byrne, Surgeon, is granted leave of absence for four months, with permission to go beyond sea, to take effect on or about June 1, 1890, by direction of the Secretary of War. Par. 3, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

By direction of the President, and in accordance with Section 1,246, Revised Statutes, an Army Retiring Board is appointed to meet at the War Department, in this city, at 11 o'clock A.M., on Wednesday, May 14, 1890, for the examination of such officers as may be ordered before it. Detail for the Board: Lieut.-Col. Anthony Heger, Surgeon; Major Charles R. Greenleaf, Surgeon. Par. 6, S. O. 110, A. G. O., Washington, D. C., May 10, 1890.

By direction of the President, the Army Retiring Board convened at Ft. Leavenworth, Kan., by War Dept. order dated May 10, 1887, published in S. O. 107, May 10, 1887, from Hdqrs. of the Army, is dissolved, and War Dept. order dated April 26, 1890, published in S. O. 99, April 28, 1890, from Hdqrs. of the Army, directing Capt. John de B. W. Gardiner, Asst. Surgeon, to report to the President of the Board for examination, is revoked. Par. 10, S. O. 111, A. G. O., Washington, D.C., May 12, 1890.

By direction of the Secretary of War, First Lieut. Charles F. Mason, Asst. Surgeon, now on leave of absence, will report in person to the commanding officer of Ft. Logan, Col., for temporary duty at that station. Par. 7, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

By direction of the Secretary of War, Major Henry M. Cronkhite, Surgeon, is relieved from station at Little Rock Bks., Ark., and assigned to duty at Ft. Lewis, Col., at which post he is now on temporary duty. Par. 10, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

By direction of the Secretary of War, Major William H. Forwood, Surgeon, is relieved from duty at Ft. Snelling, Minn., and will report in person, on the 27th inst., to the Governor of the Soldier's Home, D. C., for duty as attending surgeon at the Home. Par. 11, S. O. 113, A. G. O., Washington, D. C., May 14, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending May 17, 1890.

Surgeon B. S. Mackie, ordered to the practice ship "Constellation." May 15.

Asst. Surgeon C. H. T. Lowndes, ordered to the practice ship "Constellation." May 15.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending May 10, 1890.

Surgeon W. H. H. Hutton, detailed as chairman of Board for the physical examination of officers for the Revenue-Marine Service. April 25, 1890. Detailed as chairman of Board for the physical examination of cadets, Revenue-Marine Service. May 9, 1890.

Surgeon George Purviance, detailed as recorder of Board for the physical examination of officers of the Revenue-Marine Service. April 23, 1890.

P. A. Surgeon S. D. Brooks, when relieved at Savannah, Ga., to proceed to Cleveland, O., and assume command of the Service. May 1, 1890.

P. A. Surgeon P. M. Carrington, as soon as physically able, to proceed to Savannah, Ga., and assume command of the Service. May 1, 1890. Leave of absence extended twenty days on account of sickness. May 3, 1890.

Asst. Surgeon G. M. Magruder, detailed as recorder of Board for the physical examination of cadets, Revenue-Marine Service. May 9, 1890.

Asst. Surgeon J. J. Kinyoun, to proceed to Wilmington, Del., on special duty. May 6, 1890.

Asst. Surgeon A. W. Condict, granted leave of absence for eight days. April 12 and 22, 1890.